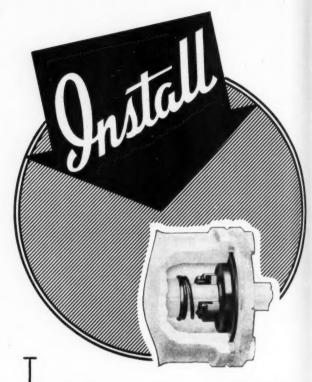
## Refrigeration Service Engineer

NOVEMBER . 1938



Report of R.S.E.S.

Convention



The widespread use of ROTARY SEAL Replacement Units is a natural outgrowth of their Economy, Dependability and Performance over a period of years. Install Rotary Seal.



#### ROTARY SEAL COMPANY

805 W. MADISON STREET

Canadian Office: CHICAGO, ILL.
382 Victoria Ave
Westmount, Montreal

European Office: Waldorpstraat 52 Don Haag, Natherlands of

eq

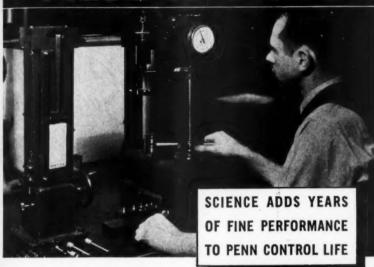
an

Nove

Rotary Seel Units are Fully Covered by U. S. and Foreign Patents

THE REFRIGERATION SERVICE ENGINEER, Nickerson & Collins Co., Publishers, 435 N. Waller Ave., Chicago, Ili. Published monthly. Vol. 6, No. 11. November, 1938. Entered as second class matter March 4, 1938. Chicago, Ill., under the Act of March 3, 1879. Subscription in United States, \$2.00 per year; all other countries, \$3.00 per year.

## WE MEASURE THE "Life Line" OF A PIECE OF STEEL



It's no mere accident that Penn Controls continue to give "new control" performance year after year on thousands of installations. Piece by piece, Penn Controls are designed for, first, unsurpassed performance, and, second, long life.

Materials that go into the numerous parts of even the most simple of controls play a vital part in the efficiency and life of such units. Constantly, Penn engineers test, with the most accurate of today's equipment, the offerings of metallurgists and chemists to find those materials that will assure peak performance for the greatest length of time. Having found and specified them, then Penn engineers test raw materials . . . check fabricated parts . . . to be doubly

sure of a finished product that meets Penn's rigid specifications.

Ingeniously simple designs, rigid quality standards, and scientific accuracy in production have won world-wide respect for Penn Controls—made them standard on many leading makes of equipment. Add prestige to your product . . . add years of trouble-free, unexcelled performance . . . by specifying Penn Controls.

PENN ELECTRIC SWITCH CO., GOSHEN, INDIANA. In Canada, Powerlite Devices, Ltd., Penn Electric Switch

Division, Toronto, Ontario. Branches, Factory Representatives and Distributors in all principal cities.

PENN

Penn Electric Switch Co., Dept. R-3, Goshen, Indiana. Mail us your catalog of Refrigeration Controls.

Name.....

y.....

THE REFRIGERATION SERVICE ENGINEER

The Cash in on POLARTRO

Slack Season S

The Exclusive M.H INTERLOCKING SERIES 10 CIRCUIT

Does



ERE'S a proposition that every un of commercial refrigeration will welcome. You or now give your customers Frost Free Refrigeration Constant Cold, Selective Control, Finger Tip Adjust ment and Double Protection for products and equip ment . . . all at lower operating cost. It eliminates see sonal adjustment and manual defrosting and enable products to retain their natural moisture.

This unmatched performance is possible only with the Polartron System, because only Polartron has to Minneapolis-Honeywell Series 10 Circuit, This circuit interlocks the Polartron thermostat and controller that both must be satisfied before the compress starts. This assures defrosting. Either the Polarts thermostat or the controller can stop the compressor The result is an entirely new conception of refrigeration control.

Cash in on this newest M-H achievement for slad season sales. The Polartron System is bound to built new business.

Minneapolis-Honeywell Regulator Company, 2834 Fourth Avenue South . . . Minneapolis, Minnesot

POLARTRO

Control System

MINNEAPOLIS-HONEYWE

REGULATOR COMPANY

## 'USING NOTHING BUT 🛞 Cut My Service



Hassmann Ligonier Commercial Refetge Rofrigoration - Steiner Products

BALTIMORE NO.

Oct. 10th, 1938.

Automatic Products Co., Milwaukee, Wisconsin.

Gentlemen: -

every un

You o

igeration

ip Adjust

nd equip ates m

d enable

only wii

n has the his circu troller w mpress Polarim mpressa

rigeration

for slad

d to build

my, 2934

innesota

WEL

The thought occurred to me that you might be interested in my experience with A. P. Thermostatic Expension Valves.

I have tried every valve on the market and before I standardized on A. P., I had plenty of headsches and service but I can truthfully say that since using nothing but A. P. valves, I have cut my service 75% and it is very unusual that we are called upon to change one in any reasonable length of time.

I buy all my parts from Parks & Hull and your valve with their service really makes the refrigerator business a pleasure.

Sincerely yours,

JNR: RCK.

• Commercial Refrigerator Installation

By J. N. Rowse, Baltimore, Md. Distributor for Allied Store Utilities Co., Subsidiary of Hussman-Ligonier

- Refrigeration Unit -Hussman-Ligonier
- (h) Valves Purchased Through Parks & Hull Appliance Corp. Baltimore, Md.

**AUTOMATIC PRODUCTS CO** *DORTH* - SECOND

**MILWAUK** WISCONSIN

Refrigeration Parts Jobbers, who recognize Quality, Stock A-P Valves. . . . And Refrigeration Service Engineers who appreciate the value of Dependable Servicefree Installations USE ONLY A-P VALVES, and DEMAND them for every job.











SERVICE ENGINEER

November, 1938

## Ranco's Latest Development-Type'G'.



# CUL-Purpose PRESSURE and TEMPERATURE and COMBINATION COMMERCIAL CONTROLS

MPORTANT new features and sound engineering combine to make Ranco

Type "G" a completely dependable commercial control with an outstanding range of usefulness. This compact unit is adaptable to all commercial applications—pressure and temperature—for heating or cooling installations. It is designed for use on all refrigerants, with ammonia power elements available. It operates accurately in any position. High capacity— $1\frac{1}{2}$  H.P. 110-220 V., A.C.  $\frac{3}{4}$  to  $1\frac{1}{2}$  H.P. 115-220 V., D.C.

Type "G" Control with Ranco's overload element is available. A pilot circuit contact is optional.

Send for bulletin describing this latest Ranco development.

Ranco Columbus, Ohio

## The Refrigeration Service Engineer

Vol. 6

No. 11

#### November 1938

A Monthly Illustrated Journal Devoted to the Interests of the Refrigeration Service Engineer in the Servicing of Domestic and Small Commercial Refrigeration Systems and Oil Burners

Official Organ
REFRIGERATION SERVICE
ENGINEERS SOCIETY

Front Cover Miscellaneous Views of Personalities and Activities Seen at the Fifth Annual R.S.E.S. Convention at Buffalo, N. Y., November 2-4.

Published by Nickerson & Collins Co. 433-435 North Waller Ave. Chicago

Telephones Austin 1303-1304-1305

**EASTERN OFFICE** 

420 Lexington, New York City Telephone Lexington 2-4816

Publishers of Technical Books and Trade Journals Serving the Refrigeration Industries for 46 years.

Subscription Rates United States \$2.00 per year. Single copies 25c, All other countries \$3.00 per year.

Copyright, 1938, by Nickerson & Collins Co., Chicago

SERVICE ENGINEER

5

#### TABLE OF CONTENTS

to Visitors	
The 1937 Household Kelvinator, by W. G. Christie	15
Service Kink or Tool Contest	19
Building a Portable Spray Outfit	20
Air Conditioning (Sixteenth Article), by W. C. Farmingdale	
Question Box	25
Comments on Question 280	25
Calculating Capacity of Machine from Ice Con- sumption	
Kelvinator Inefficient	26
Boring Holes in Soft Materials	26
Manufacturers Meet During Buffalo Convention	26
R.S.E.S. News	41
Tube Bending Contest Sponsored by Imperial a Huge Success	
The Ladies' Activities	44
New York State Association	44
New Chapter Being Formed in Atlanta, Ga	46
Chapter Notes	47
Symposium on Air Conditioning	56
Manufacturers' News	57
Geo. H. Clark Joins Staff of Square D Company	57
Penn Announces Changes in Branch Office Personnel	
L. H. Gilmer Co. Announcement	
New Respirator for Ammonia Gas	

November, 1938



THE demand by retrigeration manufacturers for Detroit Gas-Charged Thermostatic Expansion Valves is steadily increasing—and for three

"Detroit"

- very definite reasons: I. MOTOR OVERLOAD PROTEC-TION because the gas-charged valve, when starting up a warm system, remains closed until the compressor has reduced the suction pressure to a predetermined point,
- 2. MORE SENSITIVE OPERATION because the gas-charge, when condensed, results in but a drop of liquid as compared to the amount regularly used in the ordinary liquid charged valve. Thus mass effect is avoided and the change from liquid to gas effected very
- 3. LOWER POWER CONSUMPTION because gas-charged valves make it unnecessary to provide heavy duty or oversized motors to take care of the overload when starting up a warm system.

In order to provide these important advantages, all Detroit Thermostatic Expansion Valves are gas-charged at carefully regulated temperatures and pressures.

These three advantages are just as important to you.

Detroit Gas-Charged Valves cost no more than the conventional liquid charged valves. Why not take advantage of this plus value! When buying valves, specify Detroit—your jobber stocks them.

#### DETROIT LUBRICATOR COMPANY

General Offices: DETROIT, MICHIGAN

Division of American Radiator & Standard Sanitary Corporation Canadian Representatives: Railway & Engineering Specialties Ltd., Montreal, Toronto, Winnipeg

## The Refrigeration Service Engineer

Vor. 6, No. 11

ed

CHICAGO, NOVEMBER, 1938

\$2.00 per Annum

## Fifth Annual R. S. E. S. Convention an Inspiration to Visitors

650 Visitors Take Advantage of Ideal Weather to Go to Buffalo and Enjoy the Many New Attractions Offered by the Convention and the Surrounding Country. New Entertainment and Educational Features Made This Meeting a Very Enjoyable and Successful Session.

THE year of hard work by the Buffalo Convention Committee, headed by Chairman George E. Wilson, was brought to a very successful conclusion with the highly educational and entertaining features of the Refrigeration Service Engineers Society Convention, held November 2, 3 and 4 at Buffalo, New York. Too much credit cannot be given George Wilson, Charles Rittling, Joe Askin, Don Schuster, and the other committee members for the time and effort they expended in procuring such a degree of success.

The manufacturers' exhibits were set up on Tuesday, November 1, and registration was begun. A large delegation from the several Canadian Chapters was present, and included one visitor from the city of Winnipeg, who returned with sufficient enthusiasm, material and intention to organize a new chapter in his home city.

Following the plan inaugurated a year ago in Chicago, all educational papers were preprinted and distributed to the membership prior to each meeting, and the speakers were allotted a period of 15 minutes each in which to summarize their papers. A sufficient quantity of these papers have been printed so all members will receive a copy in the mail within a short time. The Educational Program Committee this year endeavored, so far as was possible, to eliminate all talks of a highly technical nature, and to confine them to practical talks. Also, the speakers were chosen as much as possible from the ranks of the membership. The highlight of this program was the opening address by Dr. Willis Carrier, who took as his theme, the subject of winter air conditioning.

Judging by the large attendance they enjoyed, the introduction of afternoon entertainments was a huge success. The first of these took place on Wednesday afternoon, in the form of a Tube Bending Contest, which was sponsored by the Imperial Brass Mfg. Co., of Chicago. The second took place on Thursday afternoon, with the showing of the motion picture entitled, "Imprisoned Freshmotion picture entitled,"

ON



CLAUDE A. BRUNTON Huntington, W. Va. President



G. A. BURNS, Toronto, Can. First Vice-president



E. A. PLESSKOTT, St. Louis Second Vice-president

his

ent

sta

mo

but

spe

tha

we

cat

wa

he

Mr

Sa

H

ness," by the Frosted Foods Sales Corp. and the showing of the movie shorts taken by Mr. Herman Goldberg at various chapter doings.

During the entire three days cameramen seemed to be everywhere, snapping pictures of all interesting features. During the Tube Bending Contest a battery of about eight cameramen was present, taking pictures at the rate of one every second.

Among these gentlemen was Mr. Irving Alter, to whom we are indebted for many of the fine views contained in the following pages. We are also indebted to Mr. Herman Goldberg, who made a very complete and permanent record of the entire affair with his movie camera. We presume that Mr. Goldberg will be showing these views at some of the future chapter meetings.

The thirty exhibits at the convention constituted a valuable part of the educational and entertaining features, and the efforts of those represented were much appreciated by the visitors.

Many invitations and bids from all parts of the country for the 1939 Convention were presented to the Board of Directors for their consideration. After due consideration of all the factors involved, the decision was made by the Board of Directors, and the announcement made by Mr. Claude Brunton, newly-elected President, that the 1939 Convention would be held in St. Louis, Mo.

#### WEDNESDAY, NOVEMBER 2

The convention was called to order by Mr. Don Schuster, president of the Niagara Frontier Chapter. Mr. Schuster expressed



R. L. DARBY, Longbeach, Calif. Member, Board of Directors



C. BUSCHKOPF Beaver Dam, Wis. Member, Board of Directors



C. P. EICH, Youngstown, Ohio Member, Board of Directors



S. A. LEITNER, Kansas City National Treasurer

con-

onal

s of

l by

arts

vere

heir

of

was

the

ton,

on-

by

ara

sed



H. T. McDERMOTT, Chicago National Secretary



E. V. BLACK, Uniontown, Pa. Sergeant-at-Arms

his pleasure at seeing so many visitors present, and extended a welcome to all. He stated that it was his intention to deliver a more or less lengthy talk for the opening, but inasmuch as some of the following speakers were in a hurry, it was necessary that he cut it short. He then introduced Mayor Thomas L. Holling of the City of Buffalo, who proceeded to give the official welcome of the city. Mayor Holling stated that he had another engagement, and because of the late hour at which the meeting was getting under way, it was necessary that he be brief, and he would turn over his duties to his Commissioner of Public Works, Mr. Louis Harding.

Mr. Schuster then introduced Rev. John Sager, Chaplain of the 174th Regiment, who gave the invocation. Following this, Mr. Harding was introduced.

Mr. Harding went on to explain that it is customary under such conditions to present the golden key to the city. It was necessary, however, due to the depression and recession of the past years to eliminate the gold formerly used, and now make the keys of lead, with a gold gilt, and because he knew no one would be particularly interested in lead, he would omit this part of the ceremony. With the words, "We have with us this morning, the most distinguished man in the field of air conditioning, who is affectionately known to us as the father of air conditioning," Mr. Harding introduced Dr. Willis Carrier, Chairman of the Board of the Carrier Corp., Syracuse, N. Y., who then proceeded to address the assembly on the subject, "The Future of the Air Conditioning Industry."

Dr. Carrier opened his address with the



WILLIS STAFFORD, Aurora, III. Member, Board of Directors



DON B. SCHUSTER, Buffalo, N. Y. Member, Board of Directors



GEORGE H. CLARK, Chairman National Educational and Examining Board



salutation, "Gentlemen and fellow service engineers." He then went on to explain that he used that expression because one of his early jobs was that of a "trouble-shooter" and that he still does a little emergency batting in this field when some of the men get stuck and come to see him, which tends to keep his hand in practice. Dr. Carrier stated that although he was supposed to talk about the future of air conditioning, he wished to digress from that subject to bring out the more important item of interestthe essentials of air conditioning. Thirty-six years ago, to be exact, a problem known as air conditioning was brought to him by his associate, from a New York office. problem had to do with the maintaining of fixed humidity and temperature conditions, both summer and winter if possible, in a lithographing plant. He was then with the Buffalo Forge Co., of that city. He had been doing a little research work on heating, and as this was cooling, it was thought that perhaps he should carry on the investigation. No one knew much about the problem of maintaining uniform temperature and humidity conditions in any type of a plant, and it was decided that an investigation and test should be made by a process which was new in research. Many things were learned and many types of equipment tried and discarded. There was no source of information, and the research included the compiling of much of the information used today. which involved the physics of moisture in air. One of the first methods tried, according to Dr. Carrier, was the use of calcium chloride as a means of dehumidifying.

day

in i

con

of

con

is

tion

cle

est

Re

in

me

me

Me

me

tli

mi

an

ho

to

po

I

spe res yo

as off

sig be the be its the

Simplicity of design and equipment, with reliable automatic control, were stressed as the most important necessities of air conditioning today. Air conditioning units are becoming more and more of the packaged type, which can be relied upon to operate automatically and without the necessity of employing a high-priced engineer on each installation. It is on these automaticallycontrolled units, which undoubtedly at some time or other will require service, that the service engineer will find his field of work. In bringing out the need and the probable future growth of air conditioning, Dr. Carrier compared it to the growth of heating apparatus used in homes today, in which he went back to the time when the only source of heat was the open fire place, which later developed into the use of stoves in one or more rooms, and then finally to the central heating plant, such as the furnace used to-

Top—Henry Valve Co., Chicago, Ill. Center —Virginia Smelting Co., West Norfolk, Va. Bottom—Peerless of America Inc., Chicago, Ill.

day. In Dr. Carrier's opinion, air conditioning will follow much of the same path in the respect that air conditioning will become just as essential as the heating plant of today. In explaining the meaning of air conditioning, Dr. Carrier pointed out that it is not necessarily a matter of heating or cooling, but is primarily a matter of conditioning the air to the proper degree of cleanliness and humidity, so that the greatest possible body comfort is experienced. Refrigeration then becomes merely a factor in the obtaining of the final results in summer, just as heating is a factor in winter.

rvice

plain

e of

noot-

ency

men

ends rrier

l to , he ring

st-

-six

n as

his

The

g of

ons.

n a

the

had

ing.

hat

ga-

lem

and

int.

and

NAS ned

lis-

napil-

ay, in rdum

ith

as dire

ed ite of

ch

yne he

k.

le

rıg he ce er ar al

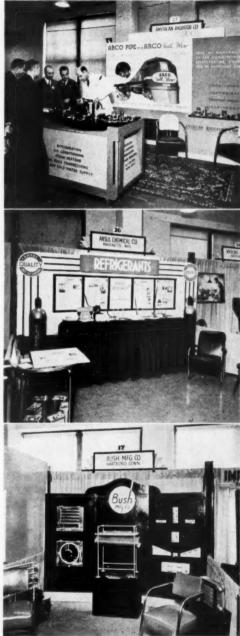
Mr. Schuster then introduced the National Officers, after which he turned the meeting over to National President, W. Hall Moss, of Memphis, Tenn. A few announcements were then made by Mr. Charles Rittling, chairman of the Entertainment Committee, pertaining to events which would follow during the day, among which was the announcement of a luncheon to be given in honor of Dr. Carrier, which all were invited to attend in the Georgian Room of the hotel.

The next order of business was the reports of the National Officers, the first of which was that given by the National Secretary, Mr. H. T. McDermott, as follows:

### REPORT OF H. T. McDERMOTT, Secretary, TO THE OFFICERS, BOARD OF DIRECTORS, AND MEMBERS OF THE SOCIETY

In REPORTING to this Convention on the activities of the office of the Secretary, I do so with the sincere belief that the record of the past year speaks for itself and definitely indicates the progress of your Society. I know I bespeak the hope of your National Officers that this report may serve

as an incentive and an inspiration to the incoming officers to aggressively continue the program deomeers to aggressively continue the program us-signed to Increase its service to the individual mem-ber. The progress we can report should indicate the substantial basis upon which your Society has been established, and more especially, the desire of its members who have selected this profession for their livelihood to receive due recognition of their professional standing in the industry. I know of no more opportune time to reaffirm the principles for which this organization was established, and doing so briefly, they may be summed up as follows: To provide in every way possible, the ways and means to further the educational and business advancement of its members, as a refrigeration service and installation engineers' educational association To at all times encourage ethical standards of practice. To assist in the stabilization of the business. To assist in the stabilization of the business.
 To assist all constructive moves designed to further the progress of the industry, and to work at all times for a better mutual understanding with those industry factors which are closely related to the interest of the members of our Organization.
 To accomplish such objectives without relinquishing the activities that are rightfully the functions of this Association.
 The entire foundation of your Society has been based on the desire of cooperation, and although I know that we, in our daily lives, have seen the Top—American Radiator Co., New York, N. Y. Center—Ansul Chemical Co., Marinette, Wis. Bottom—Bush Manufacturing Co., Hartford, Conn. SERVICE ENGINEER 11









use of the word "cooperation" abused, yet I believe some of the accomplishments of your National Organization and local chapters are an exceptional example of what a cooperative movement can mean, particularly to those members who contribute not only their financial, but their moral support as well. It may be said that this Society represents today the men who will be called upon tomorrow to provide the experience and ingenuity required in the ever-increasing applications for which refrigeration is becoming an economic necessity. We should realize that the members represented by the R.S.E.S. in a broad sense can be classed as professional engineers—possibly not so much from a theoretical or designing viewpoint, but in a more practical sense from the standpoint of proper applications and proper maintenance.

proper maintenance. In convening in Buffalo, we establish this city as the farthest Eastern point in which an R.S.E.S. Convention has been held thus far. It is a recognition of the advancement of the Society in this geographical section, not only of the United States, but also of our good neighbors in Canada, whose borders we so closely approach as we meet here today. Of particular interest is the number of men present today who comprised the relatively small group which participated in our initial convention in Chicago in October, 1934. With this initial Chicago meeting, as well as our subsequent conventions still fresh in our minds, we have a better appreciation of how far our organization has come during this time.

As our Association has added another year to its history, new problems have naturally confronted us, most of them healthy indications of a normal and progressive growth. I would like to emphasize that because of my close association with the executive management of your Society, I can personally state that your Officers and Board of Directors, whom you selected to guide the destinies of your Society, have always maturely considered these problems in the light of establishing policies that would reflect to the advantage of the greatest membership majority.

In conjunction with our educational program planned for this meeting, which by the way I am sure you will agree represents one of the most outstanding programs that our Society has thus far provided for its National Convention, we again have our trade exposition participated in by some 30 manufacturers, who by their representation have clearly indicated their desire to further the educational activities of our Society. Let me repeat that the receipts from this exposition, after the necessary deductions for the actual expense involved in the holding of the Convention, are used for additional educational work of the Society. I know those manufacturers showing at this Convention will be pleased to learn that in addition to their contact with the potential users of their equipment, their contribution for exhibit space will be used throughout the year for the work I have stated above. Our appreciation is certainly extended to them. I would like to urge that each member, and all of our guests, avail themselves of every opportunity to visit this trade exposition, which we consider an important part of our educational program. The manufacturers in their displays have endeavored to provide the type of display designed to show the correct application and the reason "with".

part of our educational program. The manufacturers in their displays have endeavored to provide the type of display designed to show the correct application and the reason "why."

We extend a cordial welcome to those guests, who for the first time may be attending a National Convention, and we hope the impression they receive will encourage them to affiliate with our Society through their nearest chapter, or as a member-al-large. We welcome those manufacturers and jobbers who are attending our Convention, and because the interests of our three groups are so mutual, we hope this meeting will contribute still further to this understanding. Many of them during the past year on various occasions have indicated their willingness to extend this cooperation, and we in turn want them to know that we have appreciated their efforts.

Top-Detroit Lubricator Co., Detroit, Mich. Center-R. & H. Chemicals Dept., Wilmington, Dela.

Bottom-View of Mills Novelty Co. Service School which preceded the convention.



to Approximately 500 sat down Fifth Annual Banquet of the Refrigeration Service Engineers Society held in the Grand Balfroom of the Statler Hotel, Buffalo, N. Y. dinch and enjoyed the evening's entertainment which was followed by dancing.

oronal
ean,
not
well.
oday
prothe
geraould
E.S.
engil or
ense
and

y as E.S. cog-this ites, hose to-men mall tion Chi-ions cia-ring

its us, and that

ttive
ttate
you
the
tto
rity.
rum
am
outfar
nave
ucathat
cesl in
ddinow
will
ttact
heir
ugh
could
ests,
this
ttant
facvide
rect

who con-eive iety -at-bers the we this rear ness ant rts.

ON

#### Educational

The work of the Educational Committee has, as usual, been under the capable supervision of our National Educational Chairman, Mr. George H. Clark, who has again unselfishly contributed his time to this principal work of the Society. Our membership is more familiar with his work through the distribution of the Lecture Course. May I suggest that more of our chapters consider the advisability of this Course as a basis of study in their educational programs.

Mr. Clark earlier this year had the opportunity of visiting with many of our chapters. He will present the report of his Committee later on.

#### Year Book

A valuable addition to the educational work was the publication of our Year Book, just preceding our last Annual Convention. It was the intent of your Officers that the Second Edition should be completed in time for distribution at this meeting. However, the desire to include additional new data and enlarge upon the scope of its treatment has made necessary the postponement of this directory for possibly another month. It is hoped that the

completed work will be available by the first of the year. This directory, in addition to the com-plete roster of membership, will contain valuable engineering information for convenient reference, as well as other pertinent data on the Society. It will have increased distribution this year, the plan-being to place it in the hands of all National man-ufacturers, who may find the directory convenient in contacting our members in the various sections of the country, where they may require the servin contacting our members in the various sections of the country, where they may require the services of our members. Some indication of its value may be determined from the number of requests your Secretary has received for information concerning the publication date of the Second Edition.

#### Questions and Answers

man

tion.

are A equi and mot

The First Edition of the Question and Answer Book was placed in the hands of our members this year. There was an immediate response as to the value of this book, and subsequent editions are planned for each year or oftener, so that they will represent a complete library on difficulties found in actual servicing, installation and operation, and the suggested methods for meeting these conditions.

(Continued on Page 27)



Left to right, top-Imperial Brass Mfg. Co., Chicago, Ill.; Fedders Mfg. Co., Buffalo, N. Y. Below Copeland Refrigeration Co., Sidney, Ohio; Ranco Inc., Columbus, Ohio.

### The 1937 Household Kelvinator

By WALTER G. CHRISTIE

THE 1987 model household Kelvinator was the last open-type domestic unit manufactured by the Kelvinator Corporation. The 1988 models of this famous line are hermetically-sealed.

t of

comlable ence, . It plan

ient ions ervalue ests

con-

lon.

this

the

ind

and

All models below six cubic feet in size are equipped with single-cylinder compressors and 1/6 h.p. capacitor-start-induction run motors. The six, seven, and nine cubic foot

the box directly behind the freezer. Because of its position close to the freezer, it is not necessary to insulate the refrigerant line between the float valve and the freezer as on other high side float machines.

All models are equipped with built-in thermometers. On the standard line of cabinets (the KS series Fig. 1) the thermometer (A in Fig. 1) is located near the



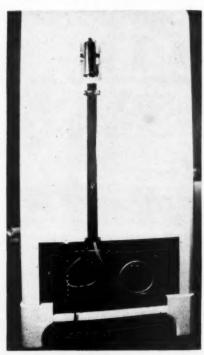


FIG. 1—SHOWING FRONT AND BACK VIEW OF K S SERIES A—Location of thermometer. B—Automatic tray release.

models are equipped with twin-cylinder compressors and 1/5 h.p. capacitor-start-induction run motors. Sulphur dioxide refrigerant is used in all models.

All household units are equipped with high side float valves. This valve is located beneath a sheet metal cover on the rear of front center on the left wall of the unit. On the de luxe models (K & PK), the thermometer is located at the top of the freezer alongside the temperature control. This thermometer is of the remote type; that is, the indicator is located near the top of the cabinet but the feeler bulb of the thermom-

eter is located in the center of the rear wall of the cabinet. Hence, even though the indicator is at the top of the cabinet, the thermometer gives the average temperature

inside the cabinet.

A twelve-point cold control is used on all units. This control has a vacation position and a defrosting position marked on the switch plate. The defroster on the KS line of machines must be set manually. After the defrosting is complete, the switch must be reset manually to the proper freezing position. In other words, these models do not employ automatic defrosting apparatus. The PK and K models, however, are equipped with an automatic defrosting switch. When the evaporator has to be defrosted, the switch is set at the defrost position. When defrosting is completed, the

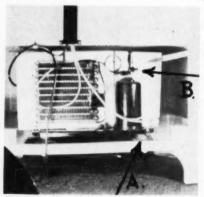


FIG. 2-REAR VIEW OF MACHINE A—Spring Suspension. Valve. B-Two-way receiver

defrost switch snaps into the "on" position and the machine continues to operate at the normal switch setting.

The refrigerating machine is located at the bottom of the cabinet. It is supported by four springs which fit under the unit between the unit and the cabinet. These four springs are of different strengths and in order to identify them each spring is of a different color. In order to get the quietest possible operation, it is necessary that the springs be set in their proper places (See

The receiver used on these models is of the vertical type. Unlike most receivers, it is equipped with a two-way receiver shutoff valve (B in Fig. 2). When the valve stem is run all the way down, the liquid line is shut off, whereas when the valve stem is run all the way up, the port on the side of the valve stem is shut off. As will be pointed out later in this article, this twoway valve stem is used whenever work has to be done on the low side of the system.

solid 1

located

cause

kept

compr

is ma

SE

In

all re

low s

vou c

mach

conde

is clo

the l

which

conta

pum

tain

line

essa

well

side

the heca

mea

iobs

200

I

may

is p

pun

wat

ceiv

of

fall

pot

sar

to

CAT

Th

the

sta

sic

leg

sic

Va

Be

A special fitting is used at the back of the freezer where the refrigerant lines are attached to the freezer. The male parts of these fittings have knife edges which bite into the female fitting and assure gas-tight

ioints.

As explained before all a.c. motors used on these models are of the capacitor-startinduction-run type. Motors made by Delco, Emerson and Wagner are used. These motors are all equipped with an automatic belt tightening device which works as fol-

The motor is suspended in its cradle from two points, one front and one back. A spring from the motor to the cradle tends to rock the motor to the right of the cabinet, while the belt tends to draw the motor to the left. Thus an even tension is kept on the belt at all times without danger of making the belt too tight.

#### Motor Protection

All a.c. motors are protected by an internal thermostat. This thermostat will stop the motor either on a high overload or when the internal temperature of the motor gets to a temperature which might harm it. This device is located on the rear end bell of the motor near the centrifugal switch. It consists of a bi-metallic strip under which is located a heater element that is hooked in series with the common motor lead. When the bi-metal strip is heated it bends and breaks the contact points. Then no more current can flow to the motor until the strip cools down. In case the temperature of the motor causes the bi-metallic strip to break contact, the motor will be inoperative for a long period of time (1/2 hour or more). However, if the motor were badly overloaded the heater element would cause the bi-metal to bend and open the circuit. In this case, the motor would be inoperative only a few minutes because heat would have to be dissipated only from the light-weight heater element and bi-metal strip.

The seal used on the compressor is of the bellows type which seals against the shaft shoulder. The original seal does not use a seal face separate from the compressor

The compressor is of the latest type with

solid pistons. Thus the suction valves are located in the discharge valve plate. Because of this arrangement, suction gas is kept isolated from the crankcase of the compressor and the danger of oil slugging is materially reduced.

m is

de of

ll be

two-

has

k of

are

ts of

e in-

ight

used

art-

elco.

hese

atic

fol-

rom

A

ahn

net.

to

on

ak-

in-

op

en

ts

it.

ell

h.

ch

ed

en

id

re

p

ie

r

d

m.

#### SERVICE OPERATIONS ON THE 1937 KELVINATOR

#### Changing the Float Valve

In case the float should have to be changed, all refrigerant must be pumped out of the low side of the system into the receiver. As you can see in Fig. 3, the receiver on this machine is between the compressor and the condenser. Hence, when the receiver valve is closed, the condenser is effectively put on the low side of the system.

Because the system uses a high side float which only opens when the float chamber contains a certain amount of refrigerant, on pump down, the float chamber will still contain some liquid refrigerant and the liquid line will be full of liquid. Hence, it is necessary that these parts be pumped down as well as the cooling coil itself. When the low side refrigerant is pumped into the receiver, the receiver cannot readily give off its heat because it has very little surface. This means that when pumping down one of these jobs the head pressure may climb to 175 to 200 pounds per square inch.

In hot weather, the overload protector may keep stopping the motor before the job is pumped down. In order to speed up the pump down period, the receiver should be continually bathed with a wet rag. As this water evaporates from the surface of the receiver, the receiver will lose a great amount of heat and the receiver temperature will fall. Even with this procedure, however, the head pressure will remain above 150 pounds. In extreme cases it will be necessary to shut the machine down to allow it to cool. If an electric fan is available, it can be set at the front of the cabinet so as to blow air over the compressor and receiver. This will help materially.

Before starting to pump down one of these models a gauge test set should be installed between the head side and the low side of the compressor. Then the center leg of the test set should be connected by means of a ½ inch line to the port on the side of the receiver valve. The receiver valve stem should first be run all the way up, the plug removed and a ½ inch pipe x ½ inch flare connector should be installed in the valve port. After the ½ inch line is con-

nected to the receiver, the receiver valve should be run all the way down and the machine should be started. After the back pressure drops to about 15 inches (showing that the coil is almost pumped down), the suction valve on the gauge test set should be opened and all refrigerant should be pumped out of the condenser and high side float. When the low side gauge reads 27 inches, the whole low side (condenser, float chamber and cooling coil) will be evacuated.

Before the float can be removed, the low side pressure must be brought to zero pounds. To do this, merely crack the head valve on the gauge test set and allow gas to flow from the head of the compressor into the low side of the system through the gauge test set. When the pressure comes to about 5 inches on the low side gauge, close

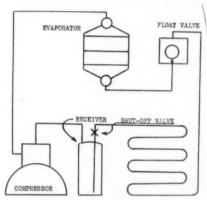


FIG. 3—SCHEMATIC DIAGRAM OF KEL-VINATOR SYSTEM

the head valve on the test set. Then crack the head valve on and off until the pressure reaches zero pounds.

To change the float, first wipe all moisture from the connections at the rear of the evaporator. Then remove the acorn nut from the inlet connection at the rear of the freezer. Remove the float valve cover at the rear of the cabinet, disconnect the liquid line at the top of the float and gently pull the float away from the cabinet. It will be necessary to work the knife edge connector through the rubber grommet at the rear of the cabinet from the front of the cabinet to prevent dislodging the grommet.

When installing the new float be certain that the knife edge connector meets its seat squarely before tightening the acorn nut. If the knife edge does not meet its seat squarely before the acorn nut is drawn up,

the fitting is sure to leak.

After the new float has been installed, all traces of air must be removed from the system. To do this, run the head valve all the way in and disconnect the head gauge from the machine. Cover the head gauge port with a rag to catch any oil that may be scrubbed out of the crankcase while you are evacuating the system. Then with the suction valve run-in two turns and the suction valve on the gauge set open, start the compressor and draw a 27 inch vacuum on the condenser, receiver, float chamber and cooling coil. When the suction gauge reads 27 inches, stop the compressor. Then reinstall the head gauge, open the head valve on the compressor and crack the head gauge valve on the test set. This will allow gas to fill the entire low side of the system. When the low side gauge reads 20 pounds, close the gauge test set valve and test all joints for leaks with 28 per cent ammonia. If no leaks are found, close the suction valve on the gauge set and run the receiver valve all the way up. Then start the compressor. The line between the receiver and the gauge will now be filled with liquid. Hence this line must be evacuated before it can be removed. To evacuate the line run the suction valve on the compressor all the way in and then open the suction valve on the gauge set. When the low side gauge reads zero pounds close the gauge valve and open the compressor valve. Now you can remove the line between the receiver and the gauge set without flooding the room with SO2.

#### Testing the Discharge Valves

Like any other cycling type of refrigerator, the discharge valves must hold tightly to prevent hot condenser gas from leaking back to the freezer through the compressor body and suction line. If this hot gas does leak back, it quickly raises the temperature of the freezer and causes the machine to cut in. Because of this heat leak, the compressor operates more than it should and the customer complains of high bills.

To check the discharge valves, install a low side gauge on the compressor and run the suction valve all the way in. Then start and stop the compressor about 10 times to slowly bring the back pressure down to 25 inches of vacuum without scrubbing oil. Then stop the machine and watch the low side gauge. If the discharge valves are bad, the gauge will climb more than 10

inches in five minutes.

To change the discharge valves, crack the suction valve to bring the low side gauge back to zero pounds. Then run the head valve all the way in and bleed off the SO, that lies in the head by slowly removing the gauge port valve from the head valve. When all the gas from the head is bled off, remove the cap screws that hold the head to the compressor. Then replace the discharge valve plate. When you do this, be sure to use two new gaskets.

#### System Short of Refrigerant

The

moti

TI

nal.

have

ceiv

yet

how

the

It .

cour

ticle

cons

be I

serv

sho

use

in

und

ma

div

be

du

an

ma

F

R

86

When a 1937 Kelvinator is short of refrigerant, the evaporator becomes partially frosted. This happens because the high side float valve will not open until a definite amount of liquid has collected in the float chamber.

Because only part of the evaporator will be absorbing heat from the cabinet, the back pressure on a system that is short of refrigerant will be considerably lower than the usual 6 to 8 inches of vacuum. When a system is found operating with a partially frosted evaporator and a low back pressure, refrigerant must be added to the system.

Refrigerant should be added to the system by connecting a drum and a gauge to the suction valve of the compressor. The suction valve should be run all the way in so that the compressor pulls gas only from the drum and not from the coil. While charging, the back pressure should be maintained at 10 pounds. Then about every two minutes the drum valve should be closed and the suction valve opened so that the compressor pulls on the coil. The compressor should be allowed to operate from 8 to 5 minutes while the frost line is checked on the coil. When the system is fully charged, the coil will be completely frosted and the thermostat (set in No. 1 position) will stop the compressor when the low side gauge reads between 6 and 7 inches.

In case the system is overcharged, the suction line will frost and the switch (set at No. 1 position) will stop the compressor at 3 to 5 inches. If the system is accidently overcharged, the drum and a gauge should be connected to the head valve on the compressor and this valve should run all the way in. Then as the compressor operates, it will pump SO<sub>2</sub> out of the system into the drum. When the back pressure comes down to normal, stop the machine, close the drum valve and open the head valve. Then check the machine on at least one complete cycle to make sure it is working properly.



ck the

gauge head so SO, and the valve.

head e disis, be

f retially high finite

float

will

back

re-

1 the

en a

ially

sure,

sys-

e to

The

y in rom

hile

ain-

two

and

om-

108

0 5

on

red,

the

top

ige

uc-

at

at

tly

ıld

m-

he

es,

he

vn

m

ck

N

1.

### A Last Reminder Send in a Letter on Your



## Service "Kink" or Tool

The Refrigeration Service Engineer is sponsoring this contest in the interests of promoting shorter and better service methods. All those actively engaged in the Service of Electric Refrigeration are invited to participate.

The first announcement of this Contest was made in the October issue of this jour-nal, but as a reminder to those who may have forgotlen, we are repeating it here.

Several fine contributions have been received so far, but we are convinced there are many more of a prize-winning nature yet to come.

Remember that no matter how large or how small, how complicated or how simple the device or method is, it may win a prize. It is its usefulness and originality that count.

OCCASIONALLY in past issues of The Refrigeration Service Engineer articles have appeared describing the use and construction of tools or equipment which can be made in the average shop and used in the service field. Other articles have described short-cut methods in service operations and useful service "kinks."

Examples of these articles have appeared in The Refrigeration Service Engineer, under the titles and dates following:

"Cotter Pin Extractor and Speed Reamer"—page 29, July, 1938

"Building an On and Off Recorder" page 13, June, 1938

"Better Rotor Lubrication"—page 32, July, 1937

Because it is our belief that there are many such tools and kinks in use by the individual readers of this journal, which would be interesting to other readers, we will conduct a contest, beginning November 1, 1938, and ending December 31, 1938, for the best articles submitted on these subjects.

Cash awards for the best stories will be made as follows:

For the best article submitted.....\$25.00
For the second best article....... 10.00
For the next three best articles—

For each additional article accept-

#### Rules of the Contest

- All entries must be postmarked before midnight, December 31, 1938.
- Judges of the contest will be Mr. Geo. H. Clark, Detroit, Mich., Mr. Paul Jacobsen, Marion, Ind., and Mr. Harry D. Busby, Associate Editor, Refrigeration Service Engineer. Their decisions will be final.
- 3. Candidates may enter one or more letters, as they see fit.
- Employees of Nickerson & Collins Co., or regularly contributing editors to THE REFRIGERATION SERVICE ENGINEER, will not be considered eligible for this contest.
- Letters will be judged on the usefulness, originality, clarity of description and illustration of the device described. Good English, spelling or composition will not be considered in the contest.
- All entries become the property of Nickerson & Collins Co., and are not returnable, whether used for publication or not.
- 7. Full credit will be given the author of each letter published.

## Building. A Portable Spray Outfit

HERE is a very inexpensive, but efficient, spray gun of the low pressure suction type, which you can build with a minimum of time from material you have in your service shop.

The principal parts of this tool are made

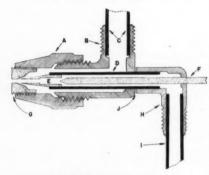


FIG. 1-THE SPRAY HEAD

A—¾ inch Flare nut
B—¾ inch Flare to ¼ inch pipe, elbow
C—¾ inch Copper tubing soldered in place
D—¾ inch Copper tube material passage
E—Steel nozzle and valve seat
F—Valve needle
G—⅓ inch pipe plug drilled and hardened
H—⅓ inch pipe to ¼ inch S.A.E. elbow
I—¾ inch poper tube soldered in place
J—Solder flowed in at this point

of refrigeration fittings and copper tubing. Referring to Fig. 1, the details of its construction are as follows:

(A) is a 3%-inch flare nut, tapped as shown with a ½-inch pipe tap, into which the spray nozzle is screwed.

(B) is a ¼-inch I.P.T. to ¾-inch S.A.E. clbow. The S.A.E., or flare end of the elbow, is drilled out to ¾-inch, which allows sufficient clearance around the ¼-inch tube for an air passage. The ¼-inch I.P.T. end of the elbow is drilled to ¾-inch, so that ¾-inch copper tubing can be soldered into it.

Point (J) of the fitting is drilled with a 1/4-inch drill to receive the 1/4-inch tube (D).

(C) is a piece of 3/2-inch copper tubing, soldered into the elbow (B) and bent to form the handle of the gun, and at the same time, provide an air passage to the nozzle. drill

for may pass () the of the zles the of

sem

thre

it i

noz

alig

Pre

the

80

elbe

T

ja

in

ne

sti

SE

(D) is a piece of ¼-inch copper tubing, which forms part of the material passage to the nozzle. This tube, in the final assembly, is soldered to the fittings (B) and (A).

(E) is the paint, or material nozzle, made from steel rod about 3/4-inch long. The small end is a No. 53 drill size, and the larger end, which acts as a valve seat, is approximately 3/42-inch drill size. The nozzle is filed down with a long sloping taper to a fairly sharp edge at the nozzle end. Solder this nozzle into the end of the 1/4-inch tube (D).

(F) is the valve needle, controlling the flow of material to the nozzle. This is made of galvanized steel wire, approximately ½-inch diameter, bent on the outer end to form a trigger handle. A small spring is attached in the final assembly, which holds the valve in the closed position.

(G) is the spray nozzle, which is made from an 1/2-inch steel pipe plug. This part of the apparatus requires the greatest care in the making, and on it depends the success of the entire tool. Screw the plug firmly into the flare nut (A), then drill a No. 58 hole through the center of the plug. Because this hole must be perfectly centered with the threads of the flare nut, it is advisable to do this operation in a lathe. With the aid of drills with which to drill away excess stock, and an improvised taper reamer, the inner part of the plug, or nozzle, should be tapered to a slightly greater angle than the nozzle (E). This improvised reamer can be made from a small three-cornered file, ground on all three sides to a point with the desired taper. The opening through the pipe plug should be straight, through a distance of about 1/2-inch before the taper begins. Cut the square end of the plug off almost flush with the end of the nut (A).

(H) is a 1/2-inch I.P.T. to 1/4-inch S.A.E. elbow, drilled to 1/4-inch at both ends to receive 1/4-inch copper tubing. Point (F) is

drilled to the same size as the wire used for the valve needle. The pipe thread end may be cut off in order to shorten the paint passage as much as possible.

(I) is a 1/4-inch copper tube soldered into the fitting (H) and extending to the bottom

of the paint container.

bing.

nt to

same

ozzle. bing,

ssage

nbly,

nade

The arger roxifiled airly this (D). the made 1/8-orm at-olds

sucolug

lug.

red

ad-

ith

vav

per

Oz-

ter

sed

01-

а

ng

ht.

re

he

ut

E.

e-

is

N

In assembling the unit, the assembled nozzles (A) and (G) should be screwed onto the elbow (B) to within one complete turn of being tight. The tube (D) with the assembled nozzle (E), should then be inserted through the elbow at the opening (J) until it is tight against the inner taper of the nozzle (G). This procedure permits the self-aligning of the openings in both nozzles. Press the elbow (H) onto the tube (D), then heat and flow solder around point (J) so that it will solder the tube (D) in both elbows.



FIG. 2—THE COMPLETED SPRAY GUN

In Fig. 2 is shown the completed tool. The container shown is a pint size Mason jar with a screw top. Two holes are drilled in the top. One is a very small hole which permits air to enter as the material is being drawn out. The other is a ¼-inch hole through which the ¼-inch tube is inserted and soldered in place.

The handle shown is a piece of broomstick, with a 1/4-inch hole bored through the center and forced onto the 1/4-inch tube.

Fig. 3 is a view of the air pump used. Rotary compressors with four or more blades

are the best type for this class of work, since they supply a steadier flow of air. Any pump that will produce two cubic feet of air per minute at a pressure of 10 to 15 lbs. will do. The one shown is an old Iroquois compressor, which is ideal for the purpose because it will supply a large steady volume of air at pressures as high as 100 lbs.

Because the Iroquois compressor has no oil reservoir of its own, it was necessary to provide one as shown. This tank acts as an oil reservoir and an oil separator. Made of a 2½ x 10 inch pipe nipple, and two pipe caps, this tank is provided with three openings. The bottom opening, which is drilled as near the bottom as possible, provides an oil feed to the end bearing of the compressor. The center hole is connected through a ¼-inch copper tube, with the compressor



FIG. 3—UTILIZING AN IROQUOIS COM-PRESSOR FOR THE AIR PUMP

discharge port. The top opening provides a connection for the air supply to the gun. A pad of steel wool about two inches thick is inserted in the top of the tank for the purpose of separating the oil from the air supply. About one quart of No. 20 oil is contained in the tank for lubrication of the compressor.

The entire unit, with its ¼-hp. motor, is mounted on a wooden base to which a good grade of casters can be attached, so that the unit may be readily moved.

#### S S S

Michael D'Antonio,

New Jersey

Enclosed find money order for \$2.00 to renew my subscription. I like it very much. To me it is the serviceman's pal. It has also saved me money and time from the information I get out of the book.

#### Sixteenth article

## Air Conditioning

Preparing the S. A. C. 559 Unit for Summer or Winter

BECAUSE of its built-in ventilation and exhaust features the S. A. C. Model 559 is more than a summer room cooler. It can be used 365 days of the year to supply four necessary functions of air conditioning, namely:

1. Ventilation (up to 250 c.f.m.).

Forced circulation of room air from 0-310 c.f.m.

 Filtering (cleaning all air handled by the unit).

 Quick room exhaust of smoke and odors (310 c.f.m.).

And all these functions are performed while outside noises are reduced to closed window level.

#### How to Prepare the Unit for Winter Operation

Since the cooling system won't be used during the winter months, all refrigerant in the system should be pumped back into the receiver. To do this install a low side gage on the suction line valve at the compressor and close the receiver valve. (See October Issue). Turn the cooling switch "On" and allow the machine to operate for about five minutes after the low side gage reads 28 inches. This is done to pump most of the refrigerant out of the oil in the crankcase. Now quickly close the head valve. Because of the design of the discharge valves, these valves will allow the head pressure and back pressure to equalize quickly after the machine is stopped. Hence, to prevent gas pressure from building up the low side pressure, it is necessary to close the head valve quickly after stopping the compressor. Don't close the head valve completely until the low side gage reads about five pounds. Then close the head valve tightly and next close the suction valve.

Because the head valve will be closed all winter and because the compressor oil will retain a certain amount of refrigerant gas in spite of the five-minute pump down operation at 28 inches, the compressor will be damaged in case the customer should accidently throw on the cooling switch. Hence it is necessary to prevent the compressor from operating regardless of the switch position. To do this, remove the wiring box cover plate at the left rear of the unit and remove the bus bar from between posts 7 and 9, and reinstall this bus bar between posts 7 and 8. (See figure 1.) This will prevent current from flowing to the compressor motor even if the compressor switch is turned on and thus will protect the compressor during the winter.

window

the rig of ref it ente ends the ar

eral t

and cl and c

the ca

off th

the C

longe

press

down

chine

the v

H

Re

move

thord

the a

of t

tions

the '

dust

chec

chec

dow

The

take

rein

clea

fan

Nu

rec

the

(

bel

wil

ma

ra

N

W

After the cooling mechanism is pumped down and disconnected, thoroughly clean out the machine compartment. Wipe up all dust and oil. Clean, oil, and check the room air for motor.

Then remove the cover from the front of the cooling coil chamber and clean the upper drain pan with a solution of Oakite in warm water. This should be done to eliminate any solid matter which might have been washed from the air in the condensate and which might create an odor as the fresh air passes over it. At the same time clean off the face of the fins with the Oakite. Then reinstall the cooling coil assembly cover and inspect the filter. If the filter is dirty, replace it with a new one. Check to see that the filter fits tightly in place so that no air leaks out of the cooling chamber around the edges of the filter. Readjust the cooling coil assembly cover if necessary to make the filter fit tightly.

Next, check the window connection and duct connections to be certain that there are no pin holes through which winter air can enter the room and create whistles and drafts. Fill any small holes with putty. Check the meeting rail felt at the top of the window to be sure it fits tightly against the window glass and that it has not shrunk or become loose. At the same time, check the felt strip at the rear of the window filler piece to see that this strip makes a good contact with the lower rail of the window when the window is in the open position. Check to see that the customer can close the

window completely in case of very stormy weather. Remove the control box cover at the right rear of the cabinet and put a drop of refrigeration oil on each control cable as it enters its armour. Do the same at the ends of the cables where the cables leave the armour. Work the ventilation lever several times to work the oil into the armour and check the dampers to see that they open and close properly.

At the completion of this service reinstall the cabinet. Be sure to wipe finger prints off the unit and window. Then explain to the customer why the cooling switch no longer controls the operation of the compressor. Explain that the act of pumping down and disconnecting refrigerating machines is done to protect his machine over the winter period.

ence

essor

vitch

box

and

osts

veen

pre-

ssor

is om-

ped

out

ust

air

of

per

rm

ny

ed

ch

es

he

n-

n-

at

ir

d

g

#### How to Prepare the Unit for Summer

Remove the cabinet from the unit and move the unit away from the window. Then thoroughly clean the outside air louvre and the air ducts. Next clean the outside faces of the condenser to remove all accumulations of dust and dirt. This is an important step because the condenser will not get the proper amount of air if it is blocked by dust and dirt.

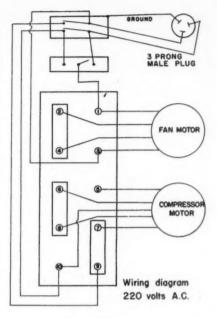
While the unit is away from the window check the operation of the dampers and check the felt connection between the window piece and the lower rail of the window. Then remove the wiring box cover plate and take the bus bar from posts 7 and 8 and reinstall it between posts 7 and 9.

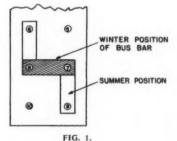
Now reinstall the unit at the window and clean out the machinery chamber and the fan chamber. Oil both motors with SAE Number 20 oil. Open the head, suction and receiver valves and turn the cooling switch on. Reinstall the front and side panels on the unit and be sure the ventilation lever is in the vertical position.

Check the belt tension by pressing on the belts. If the belts are sufficiently tight, they will depress about one-half inch under a normal hand pressure. If the belts depress more than one-half inch they must be tightened.

The compressor on the SAC Model 559 is mounted on a hinged platform. Hence, in order to tighten the belt it is necessary to raise the compressor slightly. This is done by running up the lock nut.

Next check the oil level in the compressor. This is done by means of a mirror and flash-





light held at the rear of the compressor body. The oil level should cover between one-quarter and three-quarters of the sight glass. In case the oil level is below this, oil must be added to the compressor.

Run the head valve all the way out and install a head gage on the compressor. If this registers about the same pressure as the outside air temperature, the system has liquid refrigerant in the receiver and probably has a full charge of refrigerant. However, if the gage shows little or no pressure, there must be a leak somewhere on the high side of the system and this must be located and repaired before the unit is re-

23

charged. How to add refrigerant will be discussed later.

If the unit apparently has sufficient refrigerant, open the suction and receiver valves and turn the cooling switch on. install the front and side panels on the unit and be sure the ventilation lever is in the vertical position. Then hang a thermometer near the room air return damper and place a second thermometer at the center of the discharge grille on top of the unit. Use good thermometers. If a temperature difference of between 18 degrees and 20 degrees F. is obtained after the unit has operated for about one-half hour, the cooling mechanism is working satisfactorily. However, if less than an 18-degree temperature differential is obtained the unit is not operating properly and further work must be done on it to restore it to proper working order.

#### Trouble Shooting on the Model 559

If a temperature difference less than 18 degrees is obtained between the supply grille and the return damper something may be wrong with the refrigerating mechanism. Before condenning the refrigerating machine, however, be sure that all dampers are working properly and that the ventilation lever is in the upright position.

If the temperature difference is less than 18 degrees, there is a possibility that either the system is short of refrigerant, that the liquid line strainer is partially filled with sediment, that the expansion valve bulb may have lost some of its charge, or that the compressor is inefficient.

#### How to Localize the Lack of Cooling

Install both high and low side gauges on the compressor and start the refrigerating machine. If the high and low side back pressure are materially below those shown in Table one, the machine is either short of refrigerant, the expansion valve is working improperly or the expansion valve strainer is partially filled.

Remove the cover from the cooling coil compartment and listen to the expansion valve. If this is hissing excessively, the unit is short of refrigerant.

However, if the expansion valve only hisses slightly or intermittently, the expansion valve may be all right because sometimes good expansion valves hiss slightly while operating. In this case, close the liquid line shut-off valve at the receiver and pump the job down and crack it back to zero pounds. This operation on the 559

has to be done slightly different than on conventional refrigerating machines because of the non-conventional type discharge valves used in the 559. These discharge valves allow the high and low side pressures to balance soon after the compressor stops. Hence when you pump down and crack back the 559, it is necessary to install a low side gage on the low side valve and allow compressor to operate until the low side gage reads 28 inches vacuum. Then stop the refrigerating machine and run the suction valve all the way in. Crack the suction valve until the low side gage reads about two pounds; then close the suction valve tightly. Now the entire low side of the system will be under two pounds pressure even though the suction gage may read 70 pounds pres-

of t

ERAT

is so

com

chlo

ther

com

to s

Fre

gres

gase

over

dro

volu

of a

sma

sma

twe

spe

he

cha

"F

of

tor

po

vo

ab

ch

ca wl

ch

ca

si

ch

With the low side of the system under two pounds pressure, remove the liquid line connection at the expansion valve and examine the liquid line strainer which is located behind this flare nut. If this strainer is dirty, clean it in alcohol or carbon tetrachloride. Then install a 3% inch x 3% inch sight glass between the liquid line and the expansion valve. Crack the liquid line valve and purge the liquid line at the expansion valve. Test this line for leaks and then open the liquid line shut-off valve and start the compressor. Allow the unit to operate for about three minutes and then examine the sight glass with a strong flashlight while the machine is operating. If bubbles appear in the sight glass, the system is short of refrigerant.

#### How to Add Refrigerant to the Model 559

Refrigerant should be added to the Model 559 through the low side of the system in the conventional manner. To do this, connect a gage and Freon drum to the low side valve on the compressor. Then run the suction valve all the way in and allow the compressor to pump gaseous refrigerant from the drum. If the drum gets so cold that the back pressure drops below 10 lbs. stand the drum in a pail of hot water. Always keep the drum upright. Never tip it because if a slug of liquid should enter the compressor it may ruin the piston and discharge valves in the compressor.

About every two minutes, shut off the drum valve, open the suction valve and allow the compressor to operate normally for about three minutes. Then re-examine the sight glass with a strong flashlight. As soon as no more bubbles appear in this glass, the system has sufficient refrigerant.

system has sumelent reiriger

#### 

### The Question Box

Readers are invited to send their problems pertaining to the servicing of household refrigerators and small commercial refrigerating equipment as well as oil burners to, "The Question Box."

#### COMMENTS ON QUESTION 280

an on

charge charge

ssures stops.

v side

gage le re-

ection

valve

two

zhtly.

will

ough

pres-

two

con-

mine

be-

irty.

ride.

rlass

sion

irge

Test

quid

sor.

ree

lass

nine

ght

559

del

in

ect

ide

uc-

m-

om

at

nd

YS

se

ge

he

1-

or

1e

n

e.

N

ŧ.

QUESTION BOX: We refer to your Question No. 280 on pages 32 and 33 of the October, 1938, issue of the Refriceration Service Engineer, in which there is some discussion of changing an ammonia compressor to either "Freon 12" or methyl chloride. The statement is made, "Since there will be a drop in the capacity of this compressor when changing from ammonia to some other gas, I would suggest that 'Freon' be used because it will give the greatest capacity in the machine, of the two gases."

One of the major problems in changing over an ammonia compressor is pressure drop through valves and tubing since the volume, density and viscosity characteristics of ammonia allow the use of comparatively small valve openings and comparatively Methyl chloride lies in besmall tubing. tween ammonia and "Freon 12" in this respect. Pressure drop losses therefore would be lower if the ammonia machine were changed to methyl chloride rather than to "Freon." Machines designed for "Freon" are, of course, so constructed as to give satisfactorily low pressure drop losses. point is that in spite of the fact that the volume of "Freon" gas which must be compressed for a given refrigerating effect is about eight percent lower than for methyl chloride, and consequently the theoretical capacity of the "Freon" machine is somewhat higher, actually, a given "Freon" machine will turn out approximately the same capacity if charged with methyl chloride, since the physical characteristics of methyl chloride allow the machine to be run at a somewhat higher speed.

> Very truly yours, E. W. McGovern, R & H Chemicals Dept.

#### CALCULATING CAPACITY OF MACHINE FROM ICE CONSUMPTION

QUESTION 285. I would be very much obliged if you would give me complete data

on changing an ice box that is in good condition and uses 100 lbs. of ice per 24 hours. This box is to be changed over to mechanical refrigeration, and is a sweetwater bath system for cooling bottled drinks.

The maximum temperature will be 100 degrees F. I would be glad to have data on coil area, submerged in sweetwater. Also, machine capacity, suction temperature (bath temperature), and the best equipment suited to this system. I will use 36-inch tubing for coil.

Answer: You have not given me the present bath temperatures obtained with ice, and I, therefore, cannot make accurate corrections in the following calculations for the maximum temperatures obtained.

However, assuming the present box temperature to be okay, and assuming that the amount of ice given is for average outside temperatures as obtained about this time of year, which we will say is about 75 degrees, and that the maximum outside temperature is, as you stated, 100 degrees, we will proceed to work the problem on this basis.

Since 100 lbs. of ice are used to cool the box at present, we can say that it will require a machine and coil with a 100 I.m.e. rating per 24 hours. Assuming the bath temperature required in both your present and future cases to be about 38 degrees, which should be cold enough for this purpose, you will have a temperature difference in the first case of 75—38, which equals 37 degrees, and in the second case of 100—38, which equals 62 degrees. To correct our machine and coil capacity to take care of the maximum conditions, we will have to

have one with a capacity of  $\frac{100 \times 62}{87}$  which

equals 168 I.m.e. per 24 hours. We won't want our machine, however, to run 24 hours, but will probably require it to run a maximum, under average conditions, of 16 hours per day, and we will, therefore, have to have

sufficient capacity so the machine will pro-168 duce 168 I.m.e. in 16 hours, or -- which 16

equals 10.5 lbs. per hour. Converting this to B.t.u.'s, we will have 10.5 × 144, which equals 1,512 B.t.u.'s per hour. Referring to a manufacturer's machine catalog, we will probably find that a 1/4-hp. machine will take

care of this load satisfactorily.

Since we will probably require a coil temperature of about 26 degrees, or an average suction pressure with methyl of 18 lbs., and since we will probably acquire a heat transfer of about 9 B.t.u. per square foot of coil surface per degree difference between water and refrigerant temperature, we will then 1512

require -- which equals 14 sq. ft.  $9 \times (38 - 26)$ of surface.

 $3.1416 \times .375 \times 12$ 3/8-in. tubing will have 144 which equals .098 sq. ft. of surface per foot. This means then that you will require .098

or 143 ft. of tubing, which would be too much to use with one expansion valve. We will, therefore, go to 1/2-in. tubing, which  $3.1416 \times .5 \times 12$ 

will give us which equals

14 .131 sq. ft., or which equals 107 ft. of .131 1/2-in. tubing required.

KELVINATOR INEFFICIENT

Question 286. I have been working on an old Kelvinator unit, which is about 14 years old. This machine has a brine tank and a coil tube condenser. When the expansion valve is closed or open, the suction gauge seems to vary up or down, as if the expansion valve is working properly. With the suction service valve closed and pumping from the crankcase, the compressor will only pump 20 inches vacuum, and the discharge valve closed, pumping directly into the gauge, will pump about 115 lbs. pressure, which I know is not an efficient compressor, and would cause the machine to run a lot. The brine tank, or expansion valve, will not frost up at all, but will get wet and sweaty. I have varied the pressure on the lowside from eight lbs. to five inches back and forth, and get no frost, and have charged the unit until it was overcharged, and have let it out

to a normal pressure so as to be sure to get any air from it that might be present.

ANSWER: From your description, I am of the opinion that your trouble is entirely due to worn piston walls and pistons in the Kelvinator compressor.

The c

A no can be ou circul

equip

chine

Aga manu

manu

his e

field.

Natio

descr form

gestie

parti

and tee i

Also.

as to

Th

noin

tivit

as t Paul

ble 1

Co

licit

tent

can by j

It s mat

sale

ider

Soc

gres Nat

stit

Na

hou

and

SE

The compressor is evidently so inefficient that it will not refrigerate. Several things might be done about this condition, depending upon the equipment you have, or what you may consider is the easiest way out.

If you have a means of honing the cylinder, this may be done, and a new oversize piston fitted to it. If I remember rightly, this compressor piston does not contain any rings, and it is possible, therefore, to cut grooves in the piston and install rings in it, which will improve the condition, or you might obtain a new oversize piston, which is already equipped with piston rings.

#### S S S BORING HOLES IN SOFT MATERIALS

I N BORING, or cutting holes through soft materials, such as sheet rubber, asbestos leather, etc., it is very often difficult to obtain clean-cut round holes. The material will stretch, or tear, leaving a poorly shaped opening.

To overcome this, place the material between two blocks of wood and clamp together tightly. Then, using an ordinary wood bit, or steel drill, bore through both

wood and material.

Where accurate location of the hole is necessary, drill or punch a very small hole through the material and each block before clamping together. Use a nail or wire inserted through these holes, as a means of lining them up while clamping together. The small hole can then be used as a pilot or guide for the larger drill.

#### S S S

#### MANUFACTURERS MEET **DURING BUFFALO** CONVENTION

EVERAL of the officers of the Manu-S facturers' Association, and the R.S.E.S. Contact Committee of the manufacturers, held meetings during the convention week in Buffalo. A number of non-exhibiting manufacturers were present and participated in the program of the R.S.E.S.

Officers representing the Manufacturers' Association included: Mr. J. Colyer, president; Mr. J. Forbes, vice-president; and Mr. R. N. McClure, executive secretary.

November, 1938

26

#### CONVENTION REPORT

(Continued from Page 14)

to get

am of y due Kelicient hings pend-

what

htly, any

cut

n it, you hich

soft stos

ohwill ped betoary oth

is nle

re inof he or

n

11. cylrsize

The convenient indexing makes it possible to locate the individual subjects readily.

A new addition to the educational program, which can be followed out during succeeding years, will be outlined at this meeting. Briefly, it provides for circulation to our chapters of actual cut-away equipment, which I am sure will provide an interesting adjunct to the educational programs. The National Society has already purchased one machine, and prepared an educational lecture on its operation and servicine. operation and servicing.

Speaker's Bulletin

Speaker's Bulletin
Again this year, the engineering staffs of many
manufacturers visited our chapters and presented
an educational program on their particular product.
These meetings provide an opportunity whereby the
manufacturer contacts direct the actual users of
his equipment, and considered from an educational
standpoint, this plan has been the means of securing a more intelligent use of his product in the
field.

Your Secretary would recommend that when the National Educational Committee learns of any outstanding program in any local chapter, a complete description of the program be published in bulletin form for distribution to other chapters, as a suggestion for them to consider. Further, that a questionnaire be mailed to each chapter to ascertain particular subjects to be treated in special bulletins, and for the consideration of the National Committee in planning its activities for the coming year. Also, that this questionnaire secure an expression as to subjects to be included in the future releases of the Lecture Course.

Committees

Committees
This year, a number of committees have been appointed to prepare information covering certain activities which will in turn be placed in the hands of the members. Some of these committees will report their accomplishments today. Such committee work as that of the Unit Labor Survey Committee, Mr. Paul Reed, chairman, and Dehydration of Refrigeration Equipment and Systems Committee, Mr. Warren Farr, chairman, will provide valuable and usable material for the benefit of our members.

Publicity
Considerable interest has been expressed by our

Considerable interest has been expressed by our members in the matter of securing attractive publicity material, to enable them to merchandise servicing, installation and remodeling work to their potential customers. I suggest that during the coming tential customers. I suggest that during the coming year, a committee be appointed with authority to act in the preparation of this advertising material, which can be used by our members. The National Society, by placing an order for a quantity of this material, can resell it to the members, imprinted with the individual name, in small quantities at a nominal cost. It should be attractive enough to compete with the material prepared and presented by the larger manufacturers, and should include, in addition to its sales message, some information as to the member's identity with the Refrigeration Service Engineers Society. In this manner, the Society prestige can be built up among our customers, as well as for the individual member.

Individual Chapters

As I have stated on many occasions, the strength of your National Organization must reflect the progressiveness and strength of our individual chapters. gressiveness and strength of our individual chapters. Naturally, in a democratic association as represented by your Society, much latitude is extended to our chapters in the promulgation of their policies as long as such policies are in conformity with the Contact of the National Society. Your National Society represents the central clearing house for the collection and dissemination of all information as it pertains to the activities in our field, and should, naturally, be ever alert to keep its members currently informed on the changes as they are occurring. The local chapters, in turn, should suggest to their National Officers the policies they would like to have included in the National program, and each chapter has a definite voice in the administrative policies of the National Society. At this Convention will be presented a revision of our Constitution and By-Laws, which provides for an additional classification of membership, to be known as Junior Membership. This provision is being presented at the request of a number of our chapters, who recognize there is a certain class of interested students, who desire to make the business of refrigeration servicing and installation their life work, and who will unquestionably be the representative members of the future. This classification provides that they will have the opportunity of participating in the educational activities, but will have no voice in the administrative policies of the chapters, nor will they be privileged to have a membership card or certificate until such a time as they may be qualified to apply for active membership. Naturally, the local chapter will have full jurisdiction as to whom they will admit as Junior Members.

Industry Cooperation

Since its inception, the Society has maintained, and reiterates its position today, in that it has a sincere desire to identify itself and participate in all constructive moves designed to improve the relationand reiterates its position today, in that it has a silicere desire to identify itself and participate in all
constructive moves designed to improve the relationship and conditions of the several factors closely
identified with this business. Its purpose naturally
in doing this has been a realization that all constructive moves and improvements must reflect to
the advantage of the members of our Society. During the past year, several committee appointments
have been made by your National President, among
which was a committee to provide a contact when
necessary between manufacturers and jobbers. It
can be expected that any growing organization will
be confronted with numerous problems, and one of
the purposes of your National Organization is to
provide the means of concerted action between the
interested groups whenever necessary. I feel certain,
and I have every reason to believe, that these organizations appreciate the sincerity of our purposes
and our real desire to cooperate. It can be expected
that in arriving at conclusions, sometimes there may
be an honest difference of opinion, but this should
be a further incentive to work at all times for a
more harmonious and clearer understanding. We
consider the Manufacturers' Exposition a most important part of our National meeting, and by their
participation, they not only provide direct personal
contact for themselves with representative groups
of our members, as represented here today, but also
contribute financially to the educational activities
of the Society. Our Society prides itself that among
its objectives, it is desirous at all times of encouraging a higher standard, thus building a market that
is becoming more important to the manufacturer
with each succeeding year.

We are indebted to the jobbers for the splendid
assistance received from many of these organizations throughout the country, in the work they have
done for our local chapters, and the contribution of
their facilities for many of our successful meetings.

#### Membership

In reporting the increase in the membership of your Association, I repeat that our local chapters are to be commended in their desire to secure not a your Association, I repeat that our local chapters are to be commended in their desire to secure not a quantity membership, but rather to strive for the elevation of the standard of membership, hereby attracting the representative men in each locality to membership. As the chapters' activities have increased, there, of course, has been a natural desire for those who are not members to identify themselves with the educational engineering association representing their interests. This has been brought about among other things by the acceptance of the Society principles, and the recognition it has received nationally.

Each chapter naturally has the privilege of the selection of its own members, and at this time, your National Society urgently suggests that each chapter provide for the election of its members as outlined in the local Constitution and By-Laws.

At our last Annual Convention, I reported to you our membership as of June 30, 1938, the paid-up members of our Society in good standing numbered 1800. This indicates an increase of 77 percent.

At our last convention, our total chapters were

27

30. Our total enapters as of this date are 51, an in-

30. Our total cnapters as of this date are 51, an increase of approximately 60 percent. At this Convention, Treasurer Leitner has presented an application for charter from Lincoln, Nebraska.

In the development work of assisting in the formation of chapters and cooperating with our younger organizations during our formative period, I would be remiss in my duties if I did not acknowledge the splendid cooperation which we have secured from the National Officers, as well as from so many of the individual members of our local chapters. In the National Officers, as well as from so many of the individual members of our local chapters. In the establishment of these new chapters, I would like especially to acknowledge the work of President Moss, Vice-President Brunton, Treasurer Leitner, Sergeant-at-Arms Darby, and the members of our Board of Directors, for the time they have devoted in traveling and meeting with these chapters. To read the entire list of new chapters, the dates of their charter application and the presentation of their charters, would consume considerable time in this meeting, and inasmuch as this report is being published and distributed to each of the chapters with the list of new chapters, this information may be ascertained later. be ascertained later.

Another development in your National Society is Another development in your National Society is the formation of State Associations. These Associations will provide for a closer and more harmonious understanding among chapters, and will be of inestimable value in strengthening all of the chapters in the particular states in which they are formed. It will be their purpose to assist the National Organization to carry out the objectives of the Society, and to encourage more frequent educational conferences of groups of chapters in the State throughout the year. During the mast year, the chapters of Illiences of groups of chapters in the State throughout the year. During the past year, the chapters of Illinois have formed their State Association, and it is my understanding that a meeting of the New York Chapters will be held at this Convention to formulate plans for a New York State Association. As the increase in chapters takes place in the various States, we can anticipate that additional activity along this line will be noted.

In the membership compaign for new Members-at-Large, as well as new chapters, and to assist local

Large, as well as new chapters, and to assist local chapters in their membership plans, we have had a splendid program devised by the Chairman of the National Membership Committee, Mr. E. A. Pless-kott, of St. Louis. Mr. Plesskott has devoted consid-erable time in planning a program to invite in-

quiries from prospective members. As your National Office receives these inquiries, they are passed on to the individual chapters. Mr. Plesskott has furnished a number of other plans, which because of limited time, have not been completed this year, but should be carried out in their entirety during the coming

Naturally, an important part of the work of the administrative body of your Association is the one of finances. Like any good business, it is important that this part of the Association's activity be kept balanced on the right side of the ledger. Your kept balanced on the right side of the ledger. Your Society, as you know, is a non-profit, educational Association, and it is the intent and purpose that its revenue be used for the educational interests of its members, keeping in mind that it is, of course, desirable to maintain a fair balance in the event of any special work to be undertaken. A detailed financial statement is included as a part of this report, but to briefly summarize the report of the Secretary for the fiscal year ending June 30, 1937, there was a balance of \$312.74 then. with accounts payable of \$34.5. The balance at the end of the fiscal year on June 30, 1938, was \$4722.93, with accounts payable of \$524.09. The net profit on a receipts and disbursement basis shows an actual incelpts and disbursement basis shows an actual in-crease in the bank account of \$1137.41. The Audit-ing Committee will present their report on Friday. With the natural increase in the Society's growth

With the natural increase in the Society's growth and the further enlargement of its scope of activities, I am sure you realize the increase of work in the Secretary's office, to handle the activities, and we again are indebted to Mr. J. F. Nickerson, the publisher of our Official Organ, The Refrigeration Service Engineer, for his liberal contribution of the space, secretarial time, and the time of your Scoretary in the interests of the Society. It is because the Society has not had a large expense of overhead that your Association has been in a position to secomplish the work it has. You will find in your financial statement that not one penny has been expended for overhead or labor, which largely recounts for the reason the Society has been in a position to increase its service and maintain its financial status. cial status.

#### Acknowledgment

Personally, I want to acknowledge my apprecia-

#### NEW CHAPTERS FORMED SINCE LAST CONVENTION

NAME OF CHAPTER	DATE OF FORMATION	REPRESENTATIVE PRESENT	DATE OF CHARTER PRESENTATION	NATIONAL OFFICER PRESENTING
Atlanta, Georgia Boston, Mass Central Arizona:			October 20, 1938 August 11, 1938	W. Hall Moss H. T. McDermott
Phoenix, Ariz  Dayton, Ohio  Des Moines, Iowa  Fox River Valley:	July 6, 1938 October 8, 1937 February 7, 1938	W. L. Drake S. A. Leitner	January 18, 1938 March 31, 1938	C. P. Rich S. A. Leitner
Oshkosh, Wis Illinois Valley:	April 25, 1938	C. Buschkopf		
Peoria, Ill Los Angeles, Calif		L. C. Nelson	October 14, 1938 March 25, 1938	
Mile High: Denver, Colo Missouri Valley:	July 21, 1938		September 14, 1938	
Omaha, Nebr	November 26, 1937.	H. T. McDermott	December 17, 1937	H. T. McDermott
Mohawk Valley: Utica, N. Y Mount Royal:	March, 1938	H. A. Persett	August 9, 1938	H. T. McDermott
Montreal, Canada Nashville, Tenn Ontario Forest City:	February 28, 1938 August 26, 1938	G. A. Burns	October 11, 1938 October 24, 1938	G. A. Burns W. Hall Moss
London, Canada San Diego, Calif Scranton, Pa Springfield, Ill.	January 21, 1938 April 20, 1938 March 3, 1938		September 29, 1938. August 27, 1938. August 16, 1938. October 1, 1938.	H. T. McDermott R. L. Darby H. T. McDermott H. T. McDermott
Tri-State Huntington, W. Va	October 29, 1937	Claude Brunton	February 7, 1938	C. O. McCauley
Vulcan: Birmingham, Ala Western Mass.:	February 19, 1938		April 6, 1938	W. Hall Moss
Springfield, Mass Wichita, Kansas	August 10, 1938 January 6, 1938	H. T. McDermott S. A. Leitner	March 23, 1938	S. A. Leitner
Wyoming Valley: Wilkes-Barre, Pa	January 14, 1938		August 16, 1938	H. T. McDermott

Left

ind can wit lac whi sub 012 ha WO CO1 is. ter cia



Left to Right, top—Kerotest Mfg. Co., Pittsburgh, Pa.; Rotary Seal Co., Chicago. Bottom-Co., Buffalo, N. Y.; Minneapolis-Honeywell Regulator Co., Minneapolis, Minn. Bottom-The Texas

tion for the cooperation which I have received from the officers and Board of Directors, as well as the individual members of our National Organization. I can truthfully say, because of my close association with all of them, that not once have I found them lacking in their desire to fully cooperate and assist whenever possible. They have been actively engaged this year in making your Association the growing substantial organization it is.

I know I express the appreciation of our entire organization for the splendld work that our hosts for this Convention—Niagara Frontier Chapter—have accomplished I has been my privilege to work with them in their advance plans, and I have some conception of the time and effort they have contributed to make your Convention the success it is. To acknowledge individually would include, I am sure, every member of Niagara Frontier Chapter, but to George Wilson, General Convention Chairman, and Don Schuster, President, I want to especially express my appreciation for their work, as well as to Joe Askin, Chairman of the Educational Program, Chaires Rittling, Chairman of the Entertainment Committee, and Fred Cameron, Chairman of the Exhibit Committee, and Ralph Davis, Secre-

tary of the chapter. Again, I am sure their work would have not been completed if it were not for the support they received from the entire commit-tee and the members.

tee and the members.

In closing, I can ask that the same fine cooperation that has been so generously given to your Secretary during the past year be extended to your incoming officers, and under such circumstances. I can then say that your National Society will find no obstacles in its way when we record the advancement it will make during the coming year.

National Treasurer, Mr. S. A. Leitner, then gave his report, in which he stated the accounts of the Secretary and Treasurer balanced in every detail, and that all disbursements had been made on the authorization and approval of the President, Secretary and Treasurer, supported with the proper invoices and data pertaining, there-

tional on to ished mited hould

oming of the e one mporty be Your tional that that

ourse, ent of tailed is re-Sec-1937, ounts f the h ac-

a re-iniday. owth ctivi-rk in and

the ation f the the

crehead your expo-nan-

ecia-

CER tt

ŧŧ

ŧ t

ON

#### Educational

Mr. George H. Clark gave his report of the work done by the Educational Committee during the year, and briefly reviewed the various educational bulletins which had been sent out by the National Society since the last convention. He then referred the remainder of the report to Mr. Harry Busby, whom he mentioned had some activities along this line to discuss. Mr. Busby announced a new educational feature, which will be introduced for the benefit of the chapters within a short time, which consists of the purchase and circulation of cut-away hermetic units, together with service data and information in pamphlet form, which will comprise a full evening's educational work for each of the chapters. It was pointed out that this feature is designed to familiarize the individual with the working parts of these units.

#### Unit Labor Survey

Mr. P. B. Reed, chairman of the Unit Labor Survey Committee, reported on the progress made during the past year. He stated that even though considerable effort had been put forth to obtain the necessary information to complete this survey, the results so far were very disappointing. Mr. Reed recommended, in closing, that if the membership still desired this work to continue, a committee consisting of one member from each chapter be appointed to carry it on in the coming year, and see that at least one form is filled out accurately from each chapter, thereby giving us a total of fifty or more forms from which to work.

#### Membership

The report of the Membership Committee by Mr. E. A. Plesskott, chairman, came next in which he expressed his gratitude at having the opportunity of speaking before the body on this subject. Mr. Plesskott very ably outlined the work done by his Committee throughout the year, pointing out the figures which were quoted in the National Secretary's report as being part of the results of this Committee's efforts.

#### Dehydration

Mr. W. W. Farr was then introduced, and gave his report on the "Dehydration of Refrigeration Equipment and Systems." Mr. Farr has made a very extensive study of this work in the past year, and the report he gave was very interesting and enlightening. The latter part of it was illustrated through the use of a slide, which portrayed dehydration equipment which has been recently developed, and which can be used for the purpose of drying systems. Mr. Farr's report will be published in full at a later THI

ing

Que

Clar

swe

tinu

tion

he

vea

spe

an

tak

shi

ent

M

W

Appointment of convention committees, by President Moss, were as follows:

**Nominating Committee** 

Mr. M. E. Harrison, Ashland, Ky .-Chairman.

Mr. George O'Hara, Buffalo, N. Y.

Mr. A. E. Doan, Toronto, Ont., Canada. Mr. H. E. Young, St. Joseph, Mo. Mr. J. L. Driskell, Burley, Idaho.

**Auditing Committee** 

Mr. Harry Drownes, Chicago, Ill.-Chair-

Mr. Ivar Skipple, Chicago, Ill. Mr. Eugene White, Elgin, Ill.

Resolutions Committee

Mr. Willis Stafford, Aurora, Ill .- Chairman.

Mr. W. W. Farr, Cleveland, Ohio. Mr. H. H. Shuell, Louisville, Ky.

President Moss stated that anyone who might desire could make recommendations to the Nominating Committee, regarding candidates for the various offices for the coming year.

#### WEDNESDAY AFTERNOON

On Wednesday afternoon, a Tube Bending Contest was held in the Convention Hall, sponsored by the Imperial Brass Mfg. Co. Between two and three hundred people were on hand to witness the event, and in general, it was considered a huge success. Complete information regarding this Contest will be found on another page of this issue.

At 4:00 p.m. on Wednesday afternoon, an optional trip to Niagara Falls was offered, at a total cost of \$2.00 per person. Many of the visitors availed themselves of this opportunity, and enjoyed the unusual sight of Niagara Falls in daylight and illuminated at night. A dinner at the Red Coach Inn was included in the trip.

At 9:00 p.m., Amateur Night and Variety Entertainment was held in the Grand Ballroom of the hotel, which started with a "Quiz" Contest, conducted by Mr. George Taubeneck, in which four prizes were offered to the two ladies and two gentlemen answering the most questions correctly. The Contest was followed by various Jeep and Shag Dancers. These were the highlights of the evening's entertainment, which included, in addition, other entertaining features, and was concluded with dancing until the early hours of the morning.

THURSDAY MORNING—NOVEMBER 3

en re-

ed for

Farr's

later

ittees,

Ky.—

nada.

hair-

hair-

who tions ding the

end-Iall, Co. vere ral, lete be an red. any opof ted nn ety ılla ge ofen he nd of d. nitl ly

N

With President Moss presiding, the meeting was called to order at 10:17 a.m., and the first event on the program was the Question Box, conducted by Mr. George H. Clark. Many interesting questions were answered by Mr. Clark, and the feature continued for approximately one-half hour.

Mr. Joe Askin, chairman of the Educational Program, was then introduced, and he explained briefly the plan followed this year in the presentation of papers by the speakers, which were to be presented during the two days to follow. He stated that as an innovation, this year speakers were taken, so far as possible, from the membership, rather than calling upon outside talent. Also, that talks were confined as much

as possible to those of a practical type, and all highly technical subjects were eliminated.

Mr. Askin then introduced the first speaker of the morning, Mr. A. Hulbert, of Buffalo, who presented his paper entitled, "A Generation in Refrigeration Service." Mr. Hulbert's paper will be published in full in a forthcoping issue of this journal.

The next speaker introduced by Mr. Askin was Mr. C. D. McLaughlin, M.E., of Dayton, Ohio, who has made an extensive study of beer cooling methods and beer cooling equipment. Mr. McLaughlin presented his paper entitled, "Refrigeration Service Opportunities in the Beer Dispensing Business," which will appear in these columns in a future issue.



Left to right, top-Dayton Rubber Co., Dayton, Ohio; Kold-Hold Mfg. Co., Lansing, Mich. Bottom-Automatic Products Co., Milwaukee, Wis.; Universal Cooler Corp., Detroit, Mich.

## FEDDERS



Evaporators



No. 33 Thermostatic Expansion Valves



Constant Pressure Valves

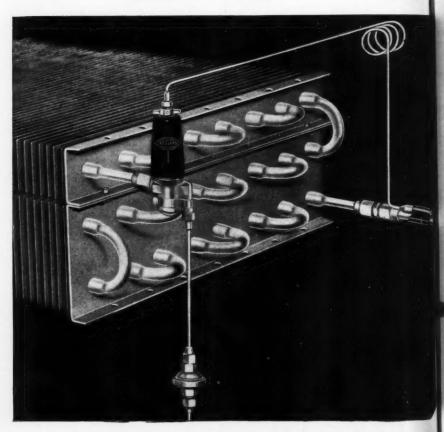


All Season Air Condition Units and Surface

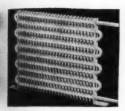
Ca all and der ser ecc Fe str su jo

> Ba th Le

> > At



## es You Complete Service h This Complete Line



Complete Line of Condensers



Series 73 Single and Twin Unit Coolers





High Capacity Thermostatic and Constant Pressure Valves

Cataloged and sold on a package basis . . . for use with all refrigerants except ammonia . . . balanced design and performance . . . elimination of duplication in ordering and inventory . . . prompt delivery from representative suppliers everywhere,—those are a few of the economies of standardizing on Fedders.

Fedders complete range of capacities, together with standardized dimensions, save installation time and assure satisfactory performance of new systems and service jobs.

Backed by every test of time and service in every climate throughout the world, it pays to standardize on Fedders Low Side Equipment.

> See us at Booths No. 99 and 100 at the Refrigeration and Air Conditioning Exhibition in Chicago, January 16-19

### FEDDERS MANUFACTURING CO. BUFFALO, N.Y.

Atlanta Detroit

Los Angeles

Chicago New York

Dallas Cincinnati Philadelphia

A sound movie, "They Know How," was presented by Mr. M. D. Irwin, of the General Electric Co. This picture portrayed a trip through the General Electric factory, where the monitor-top refrigerator is made in its entirety. The film proved to be very interesting and educational. One could not help but be impressed with the extreme care taken in the manufacture of these units and the extensive tests that are made to insure a perfect job when it is complete.

The next speaker introduced by Mr. Askin was Mr. V. E. Hall, of Binghamton, N. Y., who has had about ten years' experience in refrigeration service engineering work and has made an extensive study of chemistry as a hobby. In the past few years, Mr. Hall has turned his efforts towards the study of dehydrants. Mr. Hall then presented his paper entitled, "Dryers and Drying Agents" which without doubt was the most practical and interesting discussion of this subject ever heard in any meeting, or published in any paper. The entire talk was given in such a manner that it came direct to the point, and could be thoroughly understood with the least amount of effort. Some constructive discussion followed the delivery of this paper between Mr. Hall and Mr. E. W. McGovern, in which many more interesting points were brought to light. Mr. McGovern stated that he was heartily in accord with the statements made by Mr. Hall, but in several instances wished to add something to them. The paper by Mr. Hall, together with the discussion by Mr. McGovern, will be published in its entirety in a future issue.

Mr. G. E. Graff, of Ranco, Inc., was the next speaker introduced by Mr. Askin, and he presented his paper entitled, "Controls and Their Servicing," which was a very interesting discussion on the method of locating trouble and the remedy, insofar as the controls are affected. Much interesting data and information was given in this paper, and a complete reprint of it will appear in a forthcoming issue.

#### Election of Officers

The election of officers was the next order of business. The Nominating Committee, headed by Mr. M. E. Harrison, chairman, presented its report, in which were listed their choices for the National Officers. Following the usual procedure of such elections, additional nominations were received from the floor, and voting through secret

ballot by the delegates became the final method of election. Considerable time was required to examine the credentials of the delegates, to pass out the ballots, and finally, to collect and count these ballots to determine the final results. The meeting continued until quite late in the afternoon before the announcement of the newly-elected officers was made. The list of those elected follows:

10:

for

du

bei

ou

Me

de

tio

de

ex

ca

TH

tre

th

fir

M

W

al

H

fı

m

e

h

B

d

President—C. A. Brunton, Huntington, W. Va.

1st Vice-President-G. A. Burns, Toronto, Ont., Canada.

2nd Vice-President—E. A. Plesskott, St. Louis, Mo.

Secretary—H. T. McDermott, Chicago, Ill.

Treasurer—S. A. Leitner, Kansas City, Mo.

Sergeant-at-Arms-E. V. Black, Uniontown, Pa.

Board of Directors—R. L. Darby, Long Beach, Calif.; C. Buschkopf, Beaver Dam, Wis.; C. P. Eich, Youngstown, Ohio; Willis Stafford, Aurora, Ill.; Don B. Schuster, Buffalo, N. Y.

#### THURSDAY AFTERNOON

The motion picture entitled, "Imprisoned Freshness," was presented by Mr. R. C. Poole of the Frosted Foods Sales Corp. All visitors, including the ladies, were invited to see this film, and approximately 300 were present. The picture was very educational and entertaining, and its completion was greeted by extensive applause.

Following this film, Mr. Herman Goldberg, of Chicago, presented his movie shorts taken at various chapter doings during the past year. This was also very interesting, and many of those present had the first opportunity of seeing themselves in movies.

#### Annual Banquet

Thursday evening was the night of the Annual Banquet and Entertainment in the Grand Ballroom of the hotel. Here approximately 500 people sat down to enjoy a very excellent chicken dinner, amid the gay and festive surroundings which usually accompany such annual affairs of the Society. A view of this feature appears on page 13 of this issue. Following the dinner, several acts of enjoyable entertainment were witnessed, and the evening was wound up by dancing by all those present.

#### FRIDAY-NOVEMBER 4

final

e was

f the

nd fi-

ots to

eting

rnoon

ewly-

those

gton,

oron-

t, St.

cago,

City,

nion-

ong

)am,

/illis

ster,

ned

. C.

orp.

tely

ery

om-

use.

old-

orts

the

ng,

op-

the

the

111-

ov

he

lly

on

n-

nt

nd

N

President Moss opened the meeting at 10:35 a.m., and after expressing his thanks for the cooperation of his fellow officers during the past year, and his pleasure at being able to turn his office over to such an outstanding man as the new President, Mr. Moss introduced the newly-elected President, Claude A. Brunton. Mr. Brunton, in accepting the office, expressed his appreciation of the honor bestowed upon him by the delegates in choosing him for President. He expressed the hope that he would be able to carry on the work started by his predecessors, and vouched for his whole-hearted efforts toward this end in the coming year. The other National Officers were then introduced, each in turn accepting with thanks, the honor conferred upon them in their election to office.

President Brunton then introduced the first speaker of the morning educational program, Mr. A. Walter, of the Fedders Manufacturing Co., Buffalo, N. Y. Walter has spent considerable time as a service engineer, and has also had considerable experience in the automobile business. His subject was a demonstration of "Refrigeration Service Tips" in which he used equipment he had on hand to demonstrate methods and means of making tests and easy repairs in the field. Most of these tips have appeared in "Fedders News" and some are contained in the 1937 R.S.E.S. Year Book. Some very constructive ideas were demonstrated during the course of this talk, and several interesting questions were brought up following its completion. Mr. Walter's able presentation was very much appreciated by the audience, as was indicated by the applause received.

President Brunton then introduced Mr. S. R. Thompson, of the Refrigeration Maintenance Corp., Chicago, Ill., who has had considerable experience with the servicing of hermetically-sealed units. Mr. Thompson presented a paper on this subject, and enlarged considerably on some points, which helped to clear the thought intended. This is such a vital subject to the membership in general at the present time that considerable interest was shown in this talk. Mr. Thompson's paper will be published in a forthcoming issue.

A sound film entitled, "Selling America," which was presented by Mr. Graff, of Ranco, Inc., was the next subject on the morning program, and was introduced with

a few remarks by Mr. Graff himself. This film portrays the art of approach and selling merchandise to the customer, and dramatizes the various rules of the game, as laid down by Benjamin Franklin. For those engaged in the art of selling, it is very improbable that they would find a more informative source of information than this movie. It was both entertaining and very instructive. Those present indicated their appreciation of Mr. Graff's contribution to the merchandising program of the convention.

President Brunton thanked Mr. Graff for his presentation, and then proceeded to introduce the next speaker on the program, a man who has had considerable experience in the service field, and now engaged as Field Service Engineer for the Mills Novelty Co., Chicago, Ill.—Mr. E. J. Newcomer. Mr. Newcomer presented his paper entitled, "Servicing Ice Cream Cabinets," which will be published at a future date.

Mr. George H. Clark was the next speaker, who spoke on the subject, "Pressure Drop in Suction Lines." Mr. Clark explained that the data and information contained in this paper was compiled through the joint efforts of Mr. E. Gygax, of the Curtis Refrigerating Machine Co., St. Louis, Mo., Dr. Karl Willson, of the Ansul Chemical Co., Marinette, Wis., and himself. The work was started by Mr. Gygax, in St. Louis, where he ran a large number of tests on refrigerants, determining the actual pressure drop through certain lengths of pipe. This data then was presented to Ansul Chemical Co., where Dr. Willson and Mr. Clark took it up and extended it through mathematical calculations. The paper, containing the completed data, will be published in an early issue of this magazine, and will be found to contain some of the best information on this subject ever published. The tables and charts are presented in a form in which they are easily used in practical work.

# Friday Afternoon

The afternoon business session opened at approximately 1:50 p.m., with President Brunton presiding, and the first contribution of the session was a merchandising scheme, presented by Mr. H. J. Dunbar, Wilmington, Del. The idea involves the use of Boy Scout Troops, in which they are permitted to make money as well as bringing business to the service shop. The plan met with the approval of Scout Masters and

seems to work quite satisfactorily. The idea is to secure the business of refinishing ice cube trays, in which the Scouts make the collection of trays, and sell the customer on the idea, for which they receive a commission of 10c per tray. The total cost to the customer is 25c for which amount she receives a redip, restoring the old tray to its original polish and brightness. The boys get in the homes where a salesman could not, and this is the primary factor which made the scheme such a success. The boys brought in an average of ten trays apiece, and it is only a matter of arithmetic to determine how much money they made on an average. The amount made by the service shop on this particular work is negligible, but since the serviceman returned the fin-



Geo. E. Wilson, General Chairman of the Convention Committee.

ished tray, it gave him access to the home, and the means of becoming acquainted, and herein was the source of more business for the serviceman. The finished product is pleasing to the eye, and except for the dents it contains from rough usage, has all the appearances of a new tray. The customer, in most cases, is very well pleased, and the serviceman while he is there, will ask permission to look at the refrigerator. He also asks permission to place a sticker on the refrigerator door, with the remark that the customer may need service in the near future. This proved to be a very successful plan of gaining new customers.

The report of the Auditing Committee was read by Mr. Ivar Skipple, in the absence of Mr. Drownes, chairman.

# Report of Auditing Committee

We, the members of the Auditing Committee, hereby certify that we have exam-

ined the books of accounts and records and supporting data of the Refrigeration Service Engineers Society for the twelve-month period ended June 30, 1988.

show

dust

Com

and

erso

stan

Ser

othe

exte

pre

tha

sug

wo

tha

for

Eq

Co

me

all

fe

ar

ti

th

W

W

W

The total cash on hand and in the bank on June 30, 1938, as verified by us, was \$4,-722.93. An examination of the balance sheet as of June 30, 1938, shows a surplus of \$3,360.90, which item excludes reported uncarned income of \$949.97. This amount added to the reported surplus would make the actual surplus on a receipts and disbursements basis read as \$4,310.87, resulting in a net profit for the year of \$1,157.41.

Examination of the presented balance sheet and operating statements revealed that the books were being kept partially on an accrual basis. We, the Auditing Committee, recommend that this system be discontinued in favor of an actual receipts and disbursements system.

The books presented were very neatly kept, all records were easily accessible, and monthly statements were presented.

It was further noted in going through the books of accounts that Miss Christensen, of Nickerson & Collins Company, has been keeping these books without one cent of expense to the Society.

Signed Harry Drownes, Chairman Ivan Skipple Eugene White

### Resolutions Committee

The report of the Resolutions Committee followed, which appears, herein, in part:

We, the Resolutions Committee, after due consideration, suggest that the following resolutions and policies set forth in this report be adopted at this time:

WHEREAS: The Niagara Frontier Chapter, under the able leadership of Mr. Don Schuster and Mr. George Wilson and their committees, having entertained us most royally at the business and social sessions of the convention, and

WHEREAS: The Ladies' Committee of the Niagara Frontier Chapter, having provided a most entertaining program for the ladies attending this convention, and

WHEREAS: The visiting ladies have helped to make the convention more enjoyable by their attendance, and

WHEREAS: The companies who have provided us with moving pictures and speakers who have devoted time and study to assemble a most educational and entertaining program, and

Whereas: The Buffalo Convention and Tourist Bureau, headed by Mr. Wm. Buckley, have cooperated so generously with the Niagara Frontier Chapter to make the convention a success, and

WHEREAS: The manufacturers and jobbers, who have contributed their time to

show us the latest developments in the industry at the exhibition, and

WHEREAS: The National Officers and Committees, who have acted in their respective capacities in a most competent manner, and

WHEREAS: Mr. J. F. Nickerson, of Nickerson & Collins Company, who has constantly furnished every possible resource of his company to make the Refrigeration Service Engineers Society a success, and

WHEREAS: We do not desire to overlook others who have contributed to our welfare; Now, Therefore, be it Resolved: That we extend to all these persons our sincere ap-

preciation and signify it by a rising vote of thanks.

and

erv-

onth

c on

\$4.-

heet

of

un-

unt ake

dis-

ing

nce

led

on

m-

lis-

ind

tly

ind

the

of

en

ex-

an

ee

ue

ng

e-

211

ir

d

es

d

y

1-

g

d

e

We, the Resolutions Committee, further suggest that the following resolutions be considered for adoption at this time:

#### Committees

"That the Unit Labor Survey Committee work be continued with recommendation that the Committee simplify its demands for information from the members.

"That the Dehydration of Refrigeration Equipment and Systems Committee work be continued, and that the Committee re-port periodically in the Official Organ. Mr. Warren W. Farr, who was Chairman of that Committee last year, and who also was a member of our Committee, suggested that this work is quite a task, and to stand up here and in about fifteen minutes tell you all the things that have taken them months to gather is not fair to the Committee, and is not fair to the members; therefore, he felt that this Committee should report in an article through the Official Organ several times a year.

"That a Speakers' Bureau Committee be established to compile a bulletin for use by the local chapters in arranging for their educational programs."

### National Society's Services

"That the National Society adopt measures to assist in strengthening its existing chapters.

"That the Official Seal of the Society be changed to read: 'Efficient Refrigeration

and Air Conditioning Service.'

"That an additional decalcomania transfer be made up for use in smaller spaces, the recommended size to be 21/2 inches in diameter.

"That complete advertising material for use by the members be prepared by the National Society and be made available to

the members at a nominal cost.

That any outstanding programs, which the local chapters may have, be reported in full to the National Society, who shall send same out in bulletin form to the local chapters for their use."

"That the procedure outlined in the Na-

tional and Local Constitution and By-Laws for the acceptance of new members be followed more closely.

"That the Constitution be amended to increase the Board of Directors to seven (7) members.

Respectfully submitted,

WILLIS STAFFORD, Chairman W. W. FARR H. H. SCHUELL

Considerable discussion on the resolutions recommended followed by the delegates in general, with the outcome that the resolutions were accepted as presented. The additional provision came out that the present Officers and Board of Directors be



Joe Askin, Chairman of the Educational Program.

designated as Regional Managers in their particular territory, and as such would be responsible for the formation of new chapters and the welfare of existing chapters.

### Constitutional Amendments

President Brunton then read the proposed changes amending the Constitution, which provide for the additional classification of Junior Membership in the Society, and which went on to define the meaning of Junior Membership, and to specify the privileges of the Junior Member in a chapter. Also, a second amendment, which changes ARTICLE V, "Privileges of Members" so that each Associate Member will have one vote in the National Association, and each voting delegate shall be allowed one vote for every member in good standing in the chapter. This is a change over the previous By-Law, which stated that delegates would have one vote for every ten members or fraction, thereof. After considerable discussion by the delegates, both proposed changes were approved and passed.

As is customary, at this time invitations from the various chapters to hold the 1989 Convention in their cities were received by the President. These consisted of invitations from Boston, Cleveland, Kansas City, Toronto, Louisville, Pittsburgh and St. Louis. In accordance with the usual rules, these invitations were referred to the Na-



Charles Rittling, chairman of the entertainment committee and genial master of ceremonies.

tional Board of Directors meeting, which was held later in the afternoon, where due consideration was given to each. It was announced later in the day that St. Louis had been chosen as the convention city for 1939.

Considerably more discussion on various matters followed and at approximately 3:30 p.m., the final business session of the convention adjourned.

### FRIDAY EVENING

The final entertainment of the convention was known as Sportsman's Night, which got under way at approximately 8:00 p.m., in the Grand Ballroom. Boxing and wrestling were the main features of this program, and consisted of amateur boxing bouts of three rounds each in classifications from the 100

lb. class to 170 lb. class. The final wind-up of the boxing events consisted of four from the 100 to 112 lb. class being placed in the ring together. They were blindfolded, and wore just one glove on their right hands. At a signal from the referee, a free-for-all took place, which was permitted to continue for a period of ten minutes. This presented such humorous entertainment that it can be well called the highlight of the evening. To watch someone in a corner all by himself, swinging wildly and fanning the air, provoked considerable laughter.

The boxing events were followed by a wrestling bout in the amateur middle-weight class, which was very interesting and entertaining. Then came a professional heavyweight wrestling bout, which had many of the lady spectators feeling rather sick, with the wrestlers doing a real "grunt and groan" act, following the completion of their bout and the declaration of the winner, one of the contestants proceeded to explain just how the various parts of the bout were performed. The explanation and demonstration was very humorous in its entirety, and much more enjoyed by the spectators than the preceding bout, in which everyone thought it was serious.

### Memento to Mr. McDermott

M

it

me

TH

by

in

tic

ah

in

lil

to

ch

It was on the completion of this demonstration that Mr. Eugene White took the ring and called upon Mr. H. T. McDermott to join him. Speaking for all the chapters affiliated with the National Society, Mr. White expressed their appreciation for Mr. McDermott's time and effort during the past five years in building the Society to the point it has reached today, pointing out that Mr. McDermott has spent many hours of his own time during the evenings and weekends, and that only through his diplomatic and likeable manner could the Society have advanced so rapidly, and it was fitting at this time that they present him with some token of appreciation. He explained that considerable time had been spent in trying to determine something which would be appropriate for the occasion, but due to the fact that Mr. McDermott seemed to have almost everything, this became a very difficult matter. It was finally learned, however, that he had a pet affinity, of which everyone thought he would appreciate receiving some remembrance, whereupon Mr. White presented Mr. McDermott with an autographed picture of Joan Crawford. This, of course, was all in fun, but before



THE BUFFALO CONVENTION COMMITTEE

Front Row, left to right—Joe Askin, J. Kearney, George O'Hara, G. E. Wilson, D. B. Schuster, Fred

Cameron. Back Row—E. Wiese, J. Bush, Charles Rittling, Ray Henke, H. McMillan, W. Fryer, R. Davis,

B. Bush.

Mr. McDermott could get out of the ring, it was followed by the serious and well-meant presentation of a Lord Elgin 21-jewel wrist watch, suitably engraved on the back with the following inscription:

l-up rom the and nds. r-all nue ited ı be To self, 110a ght tervyof rith and of in-

exout emen-

ec-

ich

m-

he

ott

rs

Ir.

Ir.

he

he

at

of

k-

ic

ve

at

ne

at

ıg

3-

ie

h

1

Presented to
H. T. McDermott
by R.S.E.S. Members
5 Years National Secretary
November 4, 1938

The first presentation was very well taken by Mr. McDermott, and in the spirit of fun in which it was given. We are inclined to believe, however, that the second presentation almost floored him, and he was barely able to express his gratitude to the chapters.

# Manufacturers' Exhibits

The manufacturers' exhibits, totaling 31 in all, were of a similar type to the former years, and represented a very valuable part of the educational program of the convention. Most of the exhibits were set up on Tuesday, and were ready for display on Wednesday.

If one took time to visit these exhibits and learned something of each of them, a very liberal education could be gained, and the service engineers would be better equipped to make suitable replacements on the machines they have to service in their daily work.

Expense was not spared by these exhibitors in making the booths interesting and instructive, and due to the arrangement of

the educational and entertainment programs, wherein the visitors were kept on or near the convention floor during each day, the various representatives attending the booths were kept quite busy. A list of those exhibiting follows:

Aluminum Co. of America. American Radiator Co. Ansul Chemical Co. Automatic Products Co. Beals, McCarthy & Rogers, Inc. Bush Manufacturing Co. Copeland Refrigeration Corp. Cordley & Hayes. Dayton Rubber Mfg. Co. Detroit Lubricator Co. Fedders Manufacturing Co. W. A. Hammond Drierite Co. Henry Valve Co. Imperial Brass Mfg. Co. Kerotest Manufacturing Co. Kold-Hold Manufacturing Co. Melchior, Armstrong, Dessau Co. Mills Novelty Co. Minneapolis-Honeywell Regulator Co. Mueller Brass Co. Peerless of America, Inc. Penn Electric Switch Co. Ranco, Inc. R. & H. Chemicals Dept., E. I. du Pont

de Nemours & Co.
Root, Neal & Co.
Rotary Seal Co.
South Bend Lathe Works.
The Texas Co.
Universal Cooler Corp.
Virginia Smelting Co.
The Weatherhead Co.



PERSONALITIES AND EVENTS SNAPPED AT RANDOM AT THE CONVENTION



Top. Left—The winner of the tube bending contest, James Kline, being congratulated by Mr. Benson of Imperial Brass Mfg. Co. of Chicago. Right—The second prize winner, E. C. Fix, hard at work on his project. Lower Left—The judges making their final decision. Right—The third prize winner, R. Creamer, displaying his finished project.

# TUBE BENDING CONTEST SPONSORED BY IMPERIAL

ONE of the feature attractions of the Fifth Annual Convention was the Tube Bending Contest, sponsored by the Imperial Brass Mfg. Co., of Chicago, and held on Wednesday afternoon, November 2.

The Contest was held in the Assembly Room on the Convention floor, with between two and three hundred spectators watching the event. Six or seven cameramen, including Mr. Goldberg and his movie camera, Mr. Irving Alter, Mr. Taubeneck of "Air Conditioning and Refrigeration News,"



The speaker's table at the luncheon given in Dr. Willis Carrier's honor on Wednesday, November 2. Dr. Carrier may be seen, fifth from the right. About forty attended the luncheon.



local newspapermen and others, were snapping pictures of every move made.

So much interest and enthusiasm was shown that five chapters immediately indicated their desire to run similar contests in their meetings.

A total of nine contestants entered the Contest. Many more who desired to enter were unable to do so because they had failed to bring their tools, which was one of the requirements contained in the rules.

Judges of the Contest, appointed at the Convention, were: George H. Clark, National Educational Chairman; P. B. Reed, service manager, Servel, Inc.; C. P. Payson, Springfield, Mass., and H. D. Busby, Refrigeration Service Engineer, Chicago.

The rules of the Contest provided that all dimensions on the project must be within a tolerance of plus or minus one inch, or the contestant would be automatically disqualified. Five of the entries were disqualified on this basis, and a sixth did not finish and so was not counted. The remaining three were the winners of the three prizes offered, and were graded according to the time required.

First Prize was won by James Kline, of

Springfield, Ill., with an clapsed time of 15.3 minutes. The prize received by Mr. Kline from the Imperial Brass Mfg. Co., consisted of one of each of the following tools: a flaring tool; tube cutter; pinch-off tool; rethreading and refacing tool; tube bender; one each of ¼-inch, 5½-inch, ¾-inch, 7½-inch and 5½-inch bending springs; a charging and testing unit; charging line; pulley puller; and a tool kit in which the tools were contained. The total value of this entire kit is \$49.95.

Second Prize was won by E. C. Fix, of St. Louis, Mo., with an elapsed time of 27.7 minutes. This prize consisted of a kit, valued at \$9.80, containing a flaring tool, tube cutter, 1/4-inch, 3/6-inch and 1/2-inch tube benders, a ratchet wrench, and one extra cutting wheel, all packed in a steel case.

Mr. R. Creamer, of Columbus, Ohio, won the Third Prize, with an elapsed time of 30 minutes. His prize consisted of a tube cutter and flaring tool, packed in a steel case, and valued at \$7.60.

A list of the contestants, in the order in which they finished, together with the time required, follows:

# FOR QUICK SERVICE



# REFRIGERATION PRODUCTS

# Phone your nearest distributor

Minneapolis, Minn.
Refrigeration & Industrial Supply Co., Inc.
Minneapolis, Minn.
Refrigeration & Industrial Supply Co., Inc.
Minneapolis, Minn.
Vincent Brass & Copper Co., Inc.
Montreal Vincent Brass & Copper Co., Inc.
Montreal Minneapolis Vincent Brass & Copper Co., Inc.
Montreal Railway & Engineering Specialties, Lid.
Mt. Vernon, N. Y.
County Seat Plumbing Supply Co.
New Archael Railway & Engineering Specialties, Lid.
New Orleans, La.
Encock Inc.
New Orleans, La.
Encock Inc.
New Orleans, La.
Encock Inc.
New York, N. Y.
Encock Inc.
New York, N. Y.
Encock Inc.
New York, N. Y.
Engine Supply Co.
Pittsburgh, P.
Engine Supply Co.
Refrigeration Supply Co.
San Juan, Puerto Rico.
Refrigeration Supply Co.

# FACTORY REPRESENTATIVES

Chicago, III, Dayton, Ohio

of Ir.

d t-d-ng

Detroit, Mich.
Los Angeles, Calif,
Philadelphia, Pa.

St. Louis, Me. San Francisco, Calif.

# GENERAL EXPORT REPRESENTATIVES

Melchior, Armstrong, Dessau Co., Inc., 300 Fourth Ave., New York City, N. Y., U. S. A.

James Kline, Springfield, Ill15.3
Don Matheson, Washington, D. C 15.7
W. C. Metcalf, Joliet, Ill16.8
D. Rose, Warren, Mass 19.2
J. Barbagallo, Pittsburgh, Pa19.6
H. Spencer, Nashville, Tenn20.1
E. C. Fix, St. Louis, Mo27.7
R. Creamer, Columbus, Ohio30.0
Ivar Skipple, Chicago, Ill

In view of the extreme interest created by the Contest, and the number of requests made to the Imperial Brass Mfg. Co., they are planning a new project, which will soon be available to all chapters interested in having their own contest.

# % % % NEW YORK STATE ASSOCIATION

STEPS were taken at the Buffalo convention to form a state association of the chapters of New York. Preliminary plans were discussed and it was decided to hold a subsequent meeting at Syracuse in the near future. Mr. Harold A. Persett, President of Central New York Chapter of Syracuse acting as temporary chairman will arrange for future details.

# **EXHIBIT LOST**

WE have heard several remarks concerning Rotary Seal Co. Exhibit at the convention being lost. An apparently authoritative source states that it was mislaid in transit and never arrived.

# \* \* \* THE LADIES' ACTIVITIES

A LTHOUGH the ladies attending the convention this year were fewer in number than other years, those who were present found a full program of entertainment prepared for them—thanks to the efforts of the Ladies' Committee, consisting of Mrs. George O'Hara, Mrs. Ralph Davis, Mrs. Don Schuster, Mrs. E. G. Wiese, Mrs. Bush, and Miss Mahoney.

The program started on Wednesday morning at 10:00 a.m., at which time the ladies attended the "Home Economics Program, sponsored by the Home Economics Department of the Buffalo-Niagara-Hudson Co. Laura and Malcolm from the local radio station gave an interesting program on the modern kitchen, and Laura gave a summary of her recent trip to Mexico, showing costumes and jewelry from there.

At

a co

suffic

were

nate

Inn

the

low

sur



# "Chieftain" Quality Built Compressors and Condensing Units

are designed to give you many years of quiet, efficient and trouble free service by Engineers who have been serving the refrigeration industry for the last fourteen years.

They have again "scored a hit" with a new "V" type four cylinder compressor which is designed for use with \(^{1}\sum\_{2}\) to 1 HP motors. All of the advanced features that have proven so successful in "Chieftain" household and light commercial units are now incorporated in this new four cylinder model.

corporated in this new four cylinder model.

Mechanical improvements include, force feed lubrication to piston pin and connecting rod bearings, positive alignment of cylinder bores with main bearings by casting cylinders and crankcase in one piece. Adjustable suction shut-off valve, interchangeable parts with single and twin cylinder models. All compressor parts are machined to precision limits on up to date equipment and assembled in glass enclosed rooms where only filtered, dust free air is admitted.

Write for our latest descriptive catalog

TECUMSEH PRODUCTS CO., Refrigeration TECUMSEH, MICH.



con-

y au-

mis-

the the

num-

esent

Dre-

f the

eorge

Don

, and

orn-

adies

art-

Co.

sta-

the

arv

cos-

THE LADIES CONVENTION COMMITTEE

At 4:00 p.m. the ladies joined the men in a conducted tour to Niagara Falls, where sufficient time was spent so that the Falls were viewed both by daylight and illuminated at night. A dinner at the Red Coach Inn was enjoyed during the trip.

At 9:00 p.m. the ladies joined in the Ama-

teur Night and Variety Entertainment held in the Grand Ballroom of the Statler Hotel.

## Thursday

A meeting was called at 10:30 a.m. Thursday in the Chinese Room of the hotel for the purpose of organizing a National R.S. E.S. Auxiliary. The meeting was called to order by Mr. George E. Wilson, Chairman of the Convention Committee. After considerable discussion on the matter, it was decided that membership dues would be set at \$2.00 per year. One dollar of this amount is to be allotted to the local auxiliary, and one dollar will go to the National organization. Membership dues for Members-at-Large will be one dollar.

The purpose of the organization is to promote social and educational activities among its members.

An election of officers took place, with the following results:

President-Mrs. C. A. Brunton, Huntington, W. Va.

1st Vice-President-Mrs. M. T. Jackson, Toronto, Ontario, Canada.

2nd Vice-President—Mrs. N. D. Wagener, Butler, Pa.

# The Velvet Action Of A PEERLESS EXPANSION VALVE Is Due To Superior Design

• There is no jumping, jerking or jittering—just a sure, steady movement that makes Peerless the most advanced thermal expansion valve in the industry. The body of the valve can be placed in a temperature either higher or lower than the bulb temperature without affecting control. Valve is charged with refrigerant having same pressure-temperature characteristics as the refrigerant with which it is used. This causes a more constant superheat throughout entire temperature range. Try a Peerless on your next job and see the difference.

Ask Your Jobber or Write For Catalog

# PEERLESS OF AMERICA INC.

MAIN FACTORY . GENERAL OFFICES 515 West Thirty-fifth Street, Chicago New York Factory
43-20 34th Street
Long Island City
Pacific Coast Factory
3000 S. Main Street
Los Angeles
Export Division:
P. O. Box 636, Detroit

PERLENA

I.S. of Journal

Sections

General

in Tamperproof Can

OF ORIFICE SIZES Secretary-Mrs. E. V. Black, Uniontown, Pa.

Treasurer—Mrs. G. O'Hara, Buffalo, N. Y. Sergeant-at-Arms—Mrs. E. J. Seaton, Rockford, Ill.

#### Directors

Mrs. W. C. Metcalf, Joliet, Ill.; Mrs. M. S. Axelrod, Chicago, Ill.; Mrs. J. A. Salter, Indianapolis, Ind.; Mrs. G. A. Burns, Toronto, Ontario, Canada; Mrs. W. C. Kent, Birmingham, Ala.

Chapters represented at the meeting were:

Binghamton Chapter Central New York Chapter Greater Chicago Chapter Columbus Chapter Indianapolis Chapter Long Beach Chapter Madison Chapter Miagara Frontier Chapter Ontario Maple Leaf Chapter Pittsburgh Chapter Rockford Chapter St. Louis Chapter Tri-County Chapter

Thursday afternoon the ladies again joined the men in viewing the motion picture, "Imprisoned Freshness," presented by

Mr. R. C. Poole, of the Frosted Foods Sales Corp. This film was followed by a reel of combined shorts, taken by Mr. Herman Goldberg at various chapter doings. gani

his 6

as '

Afte

obje

cuss

plica

pres

15 8

chos

No.

in t

T

H

1)

I

be

a S

nec

0

disc

Ass

eve

wei

of

wil

Me

cer

for

for

thi

ot

The Annual Banquet and Entertainment, held in the Grand Ballroom, was the attraction of the evening. During the banquet the ladies were presented with a triple string of pearls.

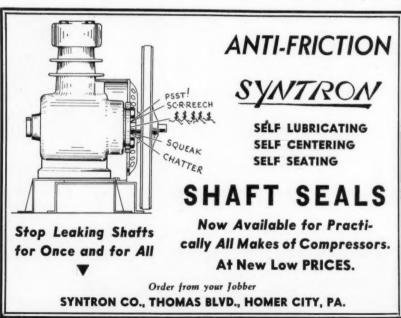
## Friday

The last day of the session started with a Theatre Party at 2:00 p.m. This was followed in the afternoon with a tea at 4:00 p.m. and, as a final wind-up, everyone attended Sportsman's Night in the Grand Ballroom, where boxing and wrestling were the feature entertainments, with cider and doughnuts being served afterward.

#### x x x

# NEW CHAPTER BEING FORMED IN ATLANTA, GA.

O<sup>N</sup> September 20 a group of servicemen in Atlanta, Ga., gathered for the purpose of considering the formation of a Chapter of the R.S.E.S. in that city. This first meeting was held in the offices of the Thomas L. Carnell Co. Mr. Carnell is credited with arousing interest among the group and or



ganizing this first meeting, and because of his efforts in the matter he was designated as Temporary Chairman of the meeting. After an explanation of the purposes and objects of the Society and considerable discussion by the group, it was decided that application for charter be made, and that those present be asked to sign it. Approximately 15 signatures were obtained, and the name chosen for the Chapter was Atlanta Chapter No. 1. Election of temporary officers resulted in the following:

Thomas L. Carnell, President

Sales

eel of

Gold-

ment,

ttrac-

et the

ing of

vith a

s fol-

4:00

e at-

were

and

1ED

emen

pur-

hap-

first

mas

with

or-

Henry W. Gullatt, Secretary D. C. Alexander, Jr., Treasurer

It was decided that another meeting would be called for September 27, at which time a set of By-Laws and such other business necessary to the formation of the Chapter would be considered.

On September 27 a reading and thorough discussion of the By-Laws of the National Association occupied the major part of the evening. More applications for membership were received and accepted, but upon a vote of the membership any further applications will have to meet with the approval of the Membership Committee before being accepted. Temporary quarters for future meet-

ings were designated as being 311 Peachtree St., N.E. Next, a discussion as to who would represent this new Chapter at the National Convention took place, and Mr. Thomas L. Carnell was chosen as the delegate, with Mr. Tommy Biggers as alternate. The President then appointed committee chairmen:

R. M. Graves, Chairman, Membership Committee

Thomas H. Hart, Chairman, Publicity Committee

Chas. S. Biggers W. M. Belle Isle

Henry W. Gullatt

Announcement of the next meeting, to be held on October 12, was made.

Chapter Notes

Under this heading will appear news of the chapter meetings. For names of the officers and dates of regular meeting nights, please refer to the Chapter Directory.

# TRI-STATE CHAPTER

October 3—The first order of business for the evening was the election of a delegate and alternate to the National Convention in



Buffalo, with the result that Mr. Forrest Poole was elected delegate, with Mr. Albert Gruber alternate. Some discussion followed on the proposed changes to Article V and Article VI of the Constitution and By-Laws, and the delegates were instructed to vote for the proposed changes. President Claude Brunton reported the arrival of a girl in the home of Mr. Monroe Chase, of Point Pleasant, and the Secretary was instructed to write Mr. Chase and his wife a letter of congratulation. Mr. Joe Peck suggested that the Secretary also pass a broad hint to the effect that a box of cigars at the next meeting would be very welcome.

October 17—A letter from the Imperial Brass Mfg. Co., explaining the Tube Bending Contest to be held at the Convention, was read by President Brunton. Mr. M. E. Harrison was elected to uphold the honor of Tri-State Chapter in this Contest. Mr. Brunton then introduced the speaker of the evening, Mr. Wilson, of the Minneapolis-Honeywell Regulator Co., who proceeded to show and explain two films, the first of which showed the old type control, and the second, the new Polartron Control, developed by the company. These films were

much enjoyed, and Mr. Wilson's explanations were very clearly given. The hearty thanks of the Chapter were extended to Mr. Wilson for his efforts.

Nels

broa

Stat

for

come

dent

pres

then

ford

of ·

Cha

falo

be 1

tern

was

T

R

R

F

S

#### TWIN CITY CHAPTER

October 11—After the usual business of the evening was disposed of, Messrs. Johnson, Jenkins and Miller of the Minneapolis-Honeywell Regalator Co., were introduced and they proceeded with a lecture and moving picture of the new Polartron Control. Following this, Mr. McCafferty, educational chairman, introduced a new educational feature by enacting the role of "Dr. Squiz," and confining his questions to those pertaining to refrigeration. A very interesting half-hour of questions and answers followed, and were much enjoyed by the meeting in general. Prizes were awarded to the winners.

#### ROCKFORD CHAPTER

October 17—Arrangements were begun and committees appointed for the Annual Stag and Turkey Raffle; also, for a Dinner Dance. After some discussion, it was decided to hold the Stag on November 5, and the Dinner Dance on November 19, at the

Compressors

★ Mills Novelty Company 4100 Fullerton Avenue, Chicago, Illinois

SOLD ONLY THROUGH SERVICEMEN, DEALERS, AND DISTRIBUTORS

Nelson Hotel. President McCarthy then broached the subject of bringing the 1939 State Convention to Rockford, and asked for the views of the membership. The outcome of the discussion was that the President was instructed to write Mr. Nelson, president of the State Association, inviting them to hold the 1939 Convention in Rockford. An election followed for the purpose of determining who would represent the Chapter at the National Convention in Buffalo, with the result that Earl Seaton will be the delegate, and Roy Shipman the alternate.

lana-

earty

ss of

John-

polis-

uced,

mov-

itrol.

ional

fea-

uiz,"

tain-

half-

and

gen-

gun

nual

nner

de-

and

rs.

The election of officers for the coming year was then held, with the following results:

R. C. McCarthy, President.
Roy Shipman, 1st Vice-President.
Henry Genin, 2nd Vice-President.
Earl Seaton, Secretary.
Leslie L. Sturch, Treasurer.
Roy E. Erickson, Sergeant-at-Arms.
Fred Barney, Educational Chairman.
Board of Directors: Harry Wardecker.
Chairman; Harry Lindquist, Chas. Billmyer.
Membership Committee: Chas. Henley,

Chairman; Don VanDenberg, Peter Sorenson.

#### PITTSBURGH CHAPTER

October 14-After the usual routine of business, an election resulted in the appointment of N. D. Wagener as delegate, and C. O. McCauley as alternate, to represent the Chapter at the forthcoming Buffalo Convention. A letter from the Imperial Brass Mfg. Co. was read, concerning the Tube Bending Contest to be held at the Convention, and Mr. J. Barbagallo was elected to represent Pittsburgh Chapter. On the educational program of the evening, Mr. Mc-Cloud was introduced, and gave a talk on the new Wilco coils. Sample parts were exhibited to the members, and a thorough explanation of the manufacture of the coils was given by Mr. McCloud. This talk was very much enjoyed by the members.

# MISSISSIPPI VALLEY CHAPTER

September  $\theta$ —On the educational program for the evening, Mr. Marc Shantz, manager

# Know your stuff!



Recorders of all types



Gauges for pressure

PRESSURES and temperatures are basic factors on every refrigeration or air conditioning job and when it comes to measuring them it pays to "know your stuff."

Equip yourself with Marsh pressure and temperature testing equipment and be sure that Marsh gauges are also specified for all your installations. There are many reasons why servicemen choose Marsh gauges and thermometers, but the feature that has received the heartiest endorsement is the Marsh "Recalibrator." When a Marsh gauge or thermometer is knocked out of adjustment, a simple screw driver adjustment not only sets it correctly at zero, but actually re-calibrates it throughout its entire range.

Write for the complete catalog of Marsh instruments for refrigeration and air conditioning.

JAS. P. MARSH CORPORATION 2059 Southport Ave., Chicago, Ill.



Dial Thermometers



Mercury

MIPS : Refrigeration Instruments



No makeshift fits with Gilmers.

GILMER Belts fit right. Save time when you're "on the spot" and need belt help in a hurry.

Belt engineers "tailor-make Gilmer Belts in the groove" on the world's largest assortment of V-moulds.

GILMER builds the belt for 247 makes of oil burners, washing machines, air-conditioners, etc. 4450 models of refrigerators.

GILMER Catalog lists America's ace belt assortment by lengths, cross-sections, and manufacturer's part numbers.

Full stocks of standard and hard-to-fit sizes carried by Gilmer jobbers everywhere.

When a belt balks, go to Gilmer!

# L. H. GILMER COMPANY Tacony, Philadelphia

of the Chicago Branch of Fedders Manufacturing Co., was scheduled to be the guest speaker. A wire was received from him, stating his inability to be present. Mr. Douglas Marshall very kindly accepted an invitation to take Mr. Shantz's place, and he gave a very interesting talk on A-P valves and other products manufactured by the Automatic Products Company. Mr. Marshall's talk was very much appreciated by all present. Mr. Nelson, president of the Illinois State Association, who was a late arrival at the meeting, talked about the Illinois State Convention, which is to be held at the Leland Hotel in Springfield.

October 14-Since this was an open meeting, and there were quite a number of prospective members present, the President read the purposes and objects of the Society, as well as the National Constitution and By-Laws. He also spoke of the forthcoming National Convention, and reminded the members that a delegate should be appointed. A letter from the Imperial Brass Mfg. Co., concerning the Tube Bending Contest to be held at the Convention, was read, and after some discussion, it was decided that the Mississippi Valley Chapter hold a Tube Bending Contest of their own at their next meeting, and the winner be appointed to represent the Chapter at the National Contest. Prizes to be awarded for the Chapter Contest were: First Prize-\$3.00; Second Prize-\$2.00; Third Prize-\$1.00. A door prize consisting of a No. 500-C Imperial Hi-Lo Charging and Testing Outfit was won by Mr. A. E. Wixon, of Rock Island, Ill. The speaker of the evening, introduced by the President, was Mr. M. W. Knight, of Peerless of America, Inc. Mr. Knight talked to the members about Peerless products, and also ran a film, showing how Peerless products are manufactured. Following this, he ran a film, showing scenes he snapped during his recent trip to Mexico. These films were all in color, and were very much enjoyed by those present. Mr. Johnson, a territorial representative for Peerless, assisted Mr. Knight in his presentation. Mr. Herman Goldberg, also a visitor at this meeting, gave an interesting talk concerning the Society, and its progress.

## TRI-COUNTY CHAPTER

October 7-Mr. Eugene White, president of the Chapter, turned the meeting over to Mr. Stafford, who introduced Mr. A. H.

sure I pictur out-of gram, every trict & Ele portra the it this 8 durin a mer stated tative found Acco to di An a Mfg. test !

and

Tube

repre

an el

appo

alter

Schme

United

gave a

lems,

our u

this, h

Mr.
Mr.
Secr
tions
the
cuss
duly
pros
the
of t
Mac
grai

stea the tair teri

met

cuss

teri who his

SEL

Schmeiser, safety director for the Western United Gas & Electric Co. Mr. Schmeiser gave a very interesting talk on safety problems, stressing the necessity for reducing our unnecessary accident toll. Following this, he presented a film on the prone pressure method of life-saving. This talk and picture proved to be very interesting, and an out-of-the-ordinary type of educational program, which was very much enjoyed by everyone. Mr. Harold Gary, assistant district manager of the Western United Gas & Electric Co., then presented a short film portraying man's battle against bugs, and the important part refrigeration plays in this struggle. A business session followed, during which President White, reporting as a member of the State Board of Directors, stated that the Constitution which was tentatively adopted by all the Chapters was found inadequate in several of its provisions. Accordingly, a new committee was appointed to draw up an entirely new Constitution. An announcement from the Imperial Brass Mfg. Co. was read on the Tube Bending Contest to be held at the National Convention, and Mr. Metcalf, winner of the Chapter's Tube Bending Contest, was appointed as representative in the National event. After an election on the matter, Mr. Metcalf was appointed as delegate and Mr. Stafford as alternate to the National Convention.

Manu-

guest

him, Mr.

ed an

nd he

alves

7 the

Mar-

d by

late

the

o be

neet-

ros-

read

, as

By-

ning

the

ap-

rass

Con-

ead,

ded

da

heir

ited

nal

the

.00; A

pe-

Vas

nd,

ced

ht,

ght

od-

er-

ng

he

co.

rv

171-

SS.

r.

nis

ng

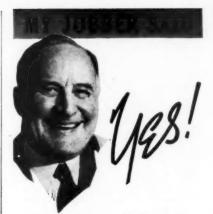
I.

d.

# MADISON CHAPTER

September 27-Due to a recent operation, Mr. Phil Noth, secretary, was absent, and Mr. H. A. Struthers was appointed Acting Secretary. A definite plan for an educational program to be followed throughout the coming season was suggested and discussed, with the result that Mr. Quam was duly elected Chairman to direct this new program. A delegation of six members from the Fox River Valley Chapter were visitors of the evening, and were welcomed by the Madison Chapter. On the educational program, the recent article, contained in "Artic News" pertaining to copper plating in methyl chloride machines, was read and discussed by the membership in general.

October 11—The meeting opened with a steak dinner and all the trimmings, during the course of which several acts of entertainment were presented. Among the entertainers was a very talented young man who sang and played several selections on his guitar. A young lady of ten years danced her way into the hearts of all those present,



I asked him if Virginia Quality Refrigerants were pure, if they were dependable, if I could always get quick service in the pinch. He said "YES."

That was a long time ago. I've been buying Virginia Quality Refrigerants from him ever since. And if you were to ask me those same questions I'd say "YES."



51



Whiskers have a definite rate of growth that is not affected by mere cutting. Shaving, however, does increase circulation in the area being shaved, bringing added nourishment to hair follicles and producing tougher whiskers.

This method of getting your attention may have whiskers on it, but pssssstl—Automatic's prices, complete stocks and fast delivery will make your profits grow.

Which of These Catalogs Do You Want?

PARTS AND SUPPLIES
THERMOMETERS AND HYDROMETERS

AUTOMATIC HEATING & COOLING SUPPLY CO. 647 West Lake Street Chicago, Illinois



Re-assembling a G. E. monitor top, Model D-60-B-26 (Commercial Unit) in our shop

# Refrigerator Dealers and Service Men Give us your Hermetic Headaches

Complete Rebuilding and Repairs on All Models
Specializing on Westinghouse, G. E. Monitor Tops and Majestics
Complete Machine Shop Service
Write for Prices—Specify Makes and Models

Flushing Refrigeration Co., Inc.
HERMETIC ENGINEERS
133-22 41st AVE., FLUSHING, N. Y.

and Attorney Carl Flem entertained with magical card tricks. Among the notables present to celebrate the presentation of the charter were: Mr. H. T. McDermott, national secretary; Mr. Herman Goldberg; Mr. Wang; and several members of the Fox River Valley and Rockford Chapters. After the dinner and entertainment, the ladies were invited to enjoy a card game in an adjoining room, while the meeting was in progress. The meeting was called to order by President Meade Robertson, and Mr. H. T. McDermott made the presentation of the charter. Mr. Goldberg gave a very interesting resumé of the Society, and stated that in his opinion our main business is to make friends and help each other in the industry. He also brought out that it is only a matter of time until the State Associations are formed, and then through our own good legislation, we can all benefit far greater than we can as individual chapters. An election was held, and Mr. Harry Streich was appointed delegate to the National Convention, with Mr. Reynolds and Mr. Meinke as alternates. Mr. Buschkopf, who was also present, gave a short talk on the progress of the Society. Mr. Wang, of Milwaukee, told of the plans being made to rebuild Milwaukee Chapter, and extended an invitation to those present to come to Milwaukee and help in this rebuilding. Mr. Goldberg took movies of the presentation of the charter, as it was in progress.

jection

on the

of this

the C

devote

E. A

delega

Mr. \

instru

of the

home

bring

Oc

busir

Gree

Leitz

tion.

were

tives

treas

tend

disp

cont

sion

of 1

jour

0

the

con

con

a s be l

ing

me

the

has

per

tea

Al

the

the

the

Tu

ap

T

st

B

m

# ONTARIO FOREST CITY CHAPTER

October 14—The meeting was held in the Hotel London, and was opened by the reading of minutes and other reports. A delegate and alternate were elected to attend the Buffalo Convention. They are Bill Bevis and "Stew" O'Brien. These gentlemen were asked to have a report on the program and exhibits for the entire Convention for the first meeting in November. Mr. J. J. McMillan, of the Universal Cooler Co., Brantford, gave a very instructive talk on "The Use of Proper Sized Lines on Refrigeration Installations." The pointers were very helpful to service engineers, and some points affecting compressor design were discussed.

# ST. LOUIS CHAPTER

October 13—After the meeting was called to order, the Educational Chairman, Mr. Gygax, introduced Mr. C. Simon, of the Minneapolis-Honeywell Regulator Co., who, assisted by Mr. A. G. Buckley at the projection machine, gave a very interesting talk on the Polartron Control. At the conclusion of this showing, an actual demonstration of the Control was made, and a short period devoted to the answering of questions. Mr. E. A. Plesskott was unanimously chosen delegate to the National Convention, and Mr. William Steinkamp alternate. Explicit instructions were given these representatives of the Chapter to bend every effort to "come home with the bacon" or in other words, to bring the 1939 Convention to St. Louis.

ed with

notables

of the

ott, na-

ldberg:

he Fox

After

ladies

in an

was in

order

Mr. H.

of the inter-

d that

lustry.

natter

is are

d leg-

than

ection

s ap-

nven-

ke as

also

gress

ukee.

build

invi-

wan-

Gold-

f the

ER

the

ead-

lele-

tend

evis

vere

and

the

Mc-

int-

The

ion

Ip-

nts

ed.

led fr.

he

0-

N

### KANSAS CITY CHAPTER

October 12—During the course of the business session of the evening, Mr. H. I. Green was elected delegate, and Mr. S. A. Leitner, alternate, to the National Convention. Expenses to the amount of \$50.00 were also voted to these two representatives, which will be taken from the Chapter treasury. The meeting was very well attended, and a great deal of enthusiasm was displayed. It is hoped that this spirit will continue in the future. Considerable discussion followed, regarding the future welfare of the Chapter, and the meeting was adjourned.

October 25-Mr. DeWilde, chairman of the Educational Committee, reported his contact with Mr. Pehl, formerly of an air conditioning school, who has agreed to give a series of lectures on air conditioning to be held in the near future. The first of this series will be held on the Tuesday following the next regular meeting. Quite a few members expressed a willingness to attend these lectures. A membership drive contest has been arranged, which will run for a period of six weeks. Captains of the two teams are Mr. Bloesser and Mr. Hataway. All active members are to be members of the teams and the losing team will entertain the winners. In response to a letter from the Imperial Brass Mfg. Co., regarding the Tube Bending Contest to be held at the National Convention, Mr. H. L. Green was appointed as the Chapter representative. The Entertainment Committee was instructed to begin plans for the Annual Banquet, which will be held on approximately the second Tuesday of January, at which time the installation of new officers will be made.

#### **BOSTON CHAPTER**

October—The October meeting of the Boston Chapter was held in the offices of



- Small volume displacement per unit of refrigeration permitting the use of small, compact equipment.
- 2. Not corrosive to ordinary equipment.
- Operates at positive pressures, even at sub-zero temperatures.
- 4. Fast cooling and quick freezing.
- 5. Gives controlled low temperatures easily and efficiently.
- Thermally stable and does not decompose at any temperature existing in the refrigeration system.
- 7. Has low head pressures, adaptable to air-cooled condensers and light-weight equipment.
- 8. Economical power.
- 9. Handled, serviced with ease.
- 10. Easy to "hold" comparatively low leakage.
- Easy to engineer—no unusual design problems.



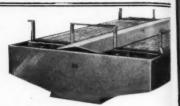
ARTIC—the Preferred Methyl Chloride for Service Work



E. I. DU PONT DE NEMOURS & CO., INC. The R. & H. Chemicals Dept., Wilmington, Del.

# POSITIVE CIRCULATION MAXIMUM COOLING

There's no "rainfall" when you use a Rempe Autodraft. The air is correctly circulated and humidity is precision-controlled. Write for free engineering data today.



NH,

in ou

sturdy

-doi prices

bron

and

was

pres

the

unal

illne

a ve

ing

his

gale

the

Mu

Stu

kid

ble

tail

ma

ter

is !

cha

ce

WS

all Cl

fo

#### REMPE AUTODRAFT

REMPE COMPANY, 340 N. Sacramento Blvd., CHICAGO

W. W. Welch, at 13 Winchester St., Medford, Mass. About 20 members were present, and Mr. John Coffey acted as Chairman. In taking a vote, it was found that at least eight members will attend the National Convention. Later in the evening, Mr. Hornaker, of the Fedders Manufacturing Co., was introduced by Mr. Chester Borden, of the A. E. Borden Co., Boston. Mr. Hornaker displayed various valves, fittings and equipment manufactured by his company. He also brought into use, a moving picture showing the different phases of manufacturing his company's products.

# MOUNT ROYAL CHAPTER

October 11-This meeting was devoted to the ceremony of receiving the charter for the Mount Royal Chapter. There was a very splendid attendance at the meeting, about 75 or 80 being present. The charter was presented by Mr. G. A. Burns, National 2nd Vice-President, which was done with a very impressive ceremony, and the obligation was very seriously received by the members. The rest of the evening was devoted to an entertainment program, in which singing, tap dancing, and sleight-of-hand tricks by a magician constituted the entertainment

features. Refreshments were served following the entertainment. The Chapter has a very good start, and makes a valuable addition to the chain of chapters throughout the country. A telegram was read during the meeting from Mr. McDermott, National Secretary, expressing his regret at not being able to be present.

## SAN DIEGO CHAPTER

August 27-Members of the newly-organized San Diego Chapter, with their wives and a goodly number of visitors from chapters in Long Beach and Los Angeles, gathered together at a dinner in the San Diego Hotel, for the purpose of receiving their charter, and having an evening of entertainment and good fellowship. After the dinner, W. H. McDowell, president of the San Diego Chapter, welcomed the guests in a few well-chosen words. William Crofoot, of Long Beach, acting as Master of Ceremonies, then kept the crowd happy with comical patter as he introduced each speaker and entertainer. Miss Jeannette Bailey, with her guitar, kept things humming and provoked much merriment with her pleasing rendition of ditties, especially those directed at various gentlemen present. Carl H. Heil-

# HERMETIC REBUILDING

G.E. - Westinghouse and Majestic

Customors in 37 states had hermetically scaled units rebuilt or exchanged by us in the past year. Complete factory equipment for precision rebuilding. One year guarantee on all rebuilt units. Exchange service available on most makes and models. Write for prices and descriptive literature.

REFRIGERATION SERVICE, INC.

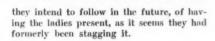
2226 S. State Street CHICAGO ORIGINAL REPLACEMENT GASKETS for all makes of compressors. Send for new bulletin No. 40

CHICAGO-WILCOX MFG. CO. 7701 S. AVALON AVE., CHICAGO, ILL. The First Thing To Remember

When called out on an emergency job remember to take along your HEALTHGUARD FUME KIT—because it's the first tool you'll need. Protect your nose, throat and lungs from irritation! One service manager writes: "There's always a Cesco Healthguard Fume Kit

in our service car—it has proved invaluable many times." Strong, sturdy, long lasting and easy to wear. Standard kit comes with cartridges for ammonia, methyl chloride and sulphur dioxide. Be prepared—don't take the "bumps" any longer. Write today for details and prices.





Healthavard

# PITTSBURGH LADIES'

AUXILIARY

By MRS. V. C. WAIGHT

POR the past several months, the Ladies' Auxiliary of Pittsburgh has been holding regular monthly meetings, and to date, has made much progress in their organization. The July meeting was held at the home of Mrs. N. D. Wagener, of Butler, Pa. Mrs. J. Barbagallo acted as Secretary, and Mrs. F. V. Golitz called the meeting to order. Dues for the membership have been set at 50c per member, and provisions have been made in the By-Laws for a fine of 25c for non-attendance. At the meetings, guest prizes are arranged for, as are also prizes for the card games at each session.

At the September meeting, plans were discussed for securing a room at Gammon's Restaurant for future meetings, where lunch could be served during the course of the meeting.

bron, former City Councilman of San Diego, and proprietor of the Heilbron Electric Co., was the main speaker of the evening, and presented regrets of and best wishes for the City's Mayor, P. J. Benbough, who was unable to be present on account of serious illness in his family. Mr. Heilbron gave a very interesting discourse on his pioneering in electrical refrigeration, interspersing his talk with snappy jokes, which provoked gales of laughter. Last, but not least, of the entertainment of the evening was the Musical Revue, put on by the Meglin Dance Studios, with their talented and versatile kiddies, as well as some very clever tumblers, who kept the audience well entertained. After several prominent visitors had made speeches congratulating the new Chapter, Mr. R. L. Darby, of Long Beach, who is National Sergeant-at-Arms, presented the charter, and administered the obligation in a very pleasing and impressive manner, with the members, in turn, receiving it in a sincere manner. At a late hour, the meeting was adjourned, after having been voted by all a huge success, and with the San Diego Chapter seemingly having set a precedent for the Northern Chapters, and one which

AGO

ollow-

has a

addighout

luring

tional

being

orga-

wives

chap-

gath-

Diego

their

tain-

din-

San

in a

t, of

mn-

omi-

aker

with

oro-

sing

ted

eil-

S

N

# Take All Wheel Gear Puller

A midget with the pull of an elephant. Every serviceman and shop needs one. High grade steel. Sturdy, compact, light weight (2 lbs.). Meets practically all requirements, where a puller is used. Changeable from three to two arm puller, almost instantly.

PRICE \$4.95 F.O.B.

FLUSHING REFRIGERATION CO., INC.
133-22 41st Ave. FLUSHING, N. Y.



At the October meeting, which was held at Gammon's Restaurant, on Liberty Ave., with Mrs. F. V. Golitz presiding, it was stressed that the Auxiliary has a need of additional members, and consequently, a general invitation was sent out to all wives of the Society members to attend and cooperate in this Auxiliary. The hostess was Mrs. Waight, and the luncheon and cards formed the entertainment for the meeting.

#### x x x

# W. W. ALLISON VISITS CHICAGO

THE National Office of the Refrigeration Service Engineers Society enjoyed a brief visit recently by W. W. Allison, of Los Angeles, Calif.

Mr. Allison is President of that young but rapidly growing Los Angeles Chapter, and is engaged in the sale and servicing of domestic and commercial refrigeration in that city. He is a distributor of Mills commercial refrigeration units.

Having come to Chicago on a business trip, he took the opportunity of visiting the National Office and, although his stay was brief, it was much enjoyed.

# SYMPOSIUM ON AIR CONDITIONING

is req

air ce

tempe

and c

Syrac

tionin

gener

ment

al);

SPATC

tioni

lems

Cond

tion,

of in

prov

air (

tures

Stre

tioni

stan

M

tric

cone

buil

M

Mi

Mr

A NNOUNCEMENT was made recently of a symposium on air conditioning to be held in the auditorium of the Engineering Building, Chicago, November 22, 1938, at 7:30 P.M.

This meeting is sponsored by the Chicago Chapter of the American Institute of Architects, the Illinois Society of Architects, the Western Society of Engineers, the Illinois Chapter of the American Society of Heating and Ventilating Engineers, the Chicago Association of Consulting Engineers, the Refrigerating Machinery Association and the Air Conditioning Manufacturers Association. It is the intention to have the members of these various organizations and their guests and such other interested public as care to come, attend this meeting. The auditorium will seat about 1,200 people.

The subject of the entire meeting is called: "Air Conditioning for Human Occupancy." Mr. John Howatt will be the presiding officer. Below is a list of the speakers and subjects:

Prof. Philip Drinker, Harvard University, 56 Shattuck Street, Boston, Mass.—What

SOLIDS-LIQUIDS-GASES-SOLIDS-LIQUIDS-GASES-SOLIDS

# DRIERITE

Scips-Liquips-GASES-SOLIDS-LIQUIDS-GASES-SOL

# The TEST that counts is the test of SERVICE

STABLE
CONSTANT YOLUME
INERT EXCEPT
TOWARD WATER
INSOLUBLE IN
ORGANIC LIQUIDS
AND REFRIGERANTS
NON-WETTING
NON-POISONOUS
NON-CORROSIVE

AND REFRIGERANTS DRIERITE is givNON-WETTING ing Efficient Service in Thousands
of New Units and
on Thousands of
NON-DISINTEGRATING Service Jobs.

Because of these

unusual properties DRIERITE dries

Air and All Com-

mon Gases and All

the Modern Refrig-

erants.

Write for Bulletin and Prices

W. A. HAMMOND DRIERITE COMPANY Yellow Springs, Ohio The Positive dependable Refrigerant Control

# TYPE K15

GENERAL SOLENOID VALVE

Ask for Catalog



# GENERAL CONTROLS

Chicago, III.-450 E. Ohio St.

Other offices in New York City, Cleveland, Detroit, Houston, San Francisco and Glendale, Calif.

NEUTRAL

is required for comfort; limits suggested for air conditioning standards with regard to temperature, relative humidity, movement and cleanliness.

cently

ng to

ineer-

1938,

icago

rchi-

, the

linois

leat-

icago

the

and

\sso-

nem-

their

c as

au-

g is

ccu-

pre-

kers

sitv.

hat

Mr. W. H. Carrier, Carrier Corporation, Syracuse, New York.—What is air conditioning from a lay viewpoint; what is its general history; health and comfort requirements; air conditioning standards (general); air conditioning systems; scientific research; some national figures in air conditioning discoveries; the resulting main problems of air conditioning.

Mr. Albert Buenger, Delco-Frigidaire Conditioning Div., General Motors Corporation, Dayton, Ohio.—Architectural problems of insulation and constructional features to provide for air conditioning installations; air conditioning costs, their economic features

Mr. Chas. S. Leopold, 213 South Broad Street, Philadelphia, Pa.—What air conditioning systems are from an engineering standpoint.

Mr. Elliott Harrington, General Electric Co., 5 Lawrence Street, Bloomfield, N. J.—Some practical applications of air conditioning with regard to residential buildings, commercial buildings, etc.

Mr. John R. Hertzler, York Ice Machinery Corp., York, Pa.—Refrigeration as applied to air conditioning.

Mr. Wm. B. Henderson, Air Conditioning & Manufacturers Assn., Southern Building, Washington, D. C.—A broad view of manufacturers' products available to the air conditioning industry for human occupancy.

# x x x

# GEO. H. CLARK JOINS STAFF OF SOUARE D COMPANY

M. R. GEO. H. CLARK, who is known to most of the refrigeration service engineers through his articles in this magazine and through his activities as Chairman of the National Educational and Examining Board of the Refrigeration Service Engineers Society, has recently joined the Regulator Division of the Square D Company at 6060 Rivard St., Detroit, Mich.

The Square D Company is well known as a manufacturer of reliable electrical equipment and plans on developing further into the refrigeration and air conditioning fields.

Mr. Clark will assist in the development and sale of refrigerant control valves. A new line of pressure and temperature regu-



57



rubber - coated, packed Gaskets and extruded rubber Gaskets that last longer retain higher efficiency—because made of finest materials and workmanship. Write for free samples, giving your job-

ber's name and address.

v. J. DENNIS & CO

# YOU NEE

This HEAD PRESSURE CALCU-LATOR gives you HEAD PRES-SURES for ANY air cooled installa-

using SO2. tion Methyl, or F-12.

Price \$1.25. See your REFRIGERATION JORRER

or send check to

THE COOK CO Box 176, Columbus, Ohio



Peni

since

ferre

delp

sprii knov

to ]

T

Phi

lators has been in development for some time and will be announced shortly.



J. F. COYNE OF THE H. CHANNON COM-PANY, Chicago, makes the acquaintance of the Henry Valve Company's new carton for dryers, strainers and small valves. Designed to do a sell-ing job by means of eye appeal, the handsome black and yellow-ochre cartons are varnished to retain their bright, attractive appearance on the shelf.

# L. H. GILMER CO. ANNOUNCEMENT

THE L. H. Gilmer Co. announces the appointment of Philip J. Walsh as District Manager of the Pittsburgh territory on Gilmer refrigerator belts.

x x x

# PENN ANNOUNCES CHANGES IN BRANCH OFFICE PERSONNEL

NUMBER of recent changes in branch A office personnel, and the addition of one new branch office, have been announced by R. H. Luscombe, sales manager, Penn Electric Switch Co., Goshen, Indiana.

A. W. Barr, who has been associated with the automatic control industry for many years, has been named manager of the company's Boston office. Mr. Barr has a wide acquaintance in automatic heating, refrigeration, and air conditioning fields, and is especially conversant with business conditions in New England, where he has spent much of his time in recent years. He is a regional chairman of the Old Timers' Club.



# WE REALLY CAN SAVE YOU MONEY



complete.

on all your refrigeration parts, tools and supplies. We ship orders same day as received whenever possible. Write on your letterhead for our complete new catalog.

W. BLYTHE CO. 2334 So. Michigan, Chicago



A. L. Rubel, who has been manager of Penn Electric Switch Co.'s Boston office since it was opened in 1933, has been transferred to take charge of the company's Philadelphia Branch, which was opened last spring. Mr. Rubel, who has an intimate knowledge of the oil burner industry, goes

trict

Gil-

IN

L

neh

one by

lec-

vith

any

om-

ride

TR-

pe-

in

of

nal

Coon served as a sales engineer on the staff of the company's New York office, and was engaged in the sale of heating accessories prior to that time.

"Increasing demand of the automatic heating, air conditioning, refrigeration, pump and air compressor industries for the services and assistance of our field engineers, have made it desirable for us to expand our branch office facilities at this time," said Mr. Luscombe in making the announcement. "This is another move of Penn's to better serve manufacturers, jobbers, dealers and service engineers in these fields."



Left to Right are: D. A. Coon, A. L. Rubel and A. W. Barr

to Philadelphia with a wide acquaintanceship in that territory.

D. A. Coon, who opened the company's Philadelphia Branch last spring, was placed in charge of the new branch opened at St. Louis in September. For three years Mr.

# S S S

# NEW RESPIRATOR FOR AMMONIA GASES

A NEW, rubber constructed respirator has just been perfected to protect the lungs of refrigerator workers and those who must work where ammonia gas prevails. It is a twin filter type respirator equipped with twin cartridges of special Silica Gel content

# Jarrow Replacement Door Gaskets



made especially for NORGE replacement. It fits. ALL JARROW gaskets are built to Manufacturers' original specifications. Insist on JARROW GASKETS.

JARROW PRODUCTS CORPORATION
420 N. LaSalle St., Chicago, Ill.

# In CANADA

We carry a complete stock of AUTOMATIC PRODUCTS Expansion Valves and Solenoids

Write for free bulletin showing New Automatic Expansion Valve

REFRIGERATION SUPPLIES CO.,LTD LONDON . ONTARIO

# Don't Wish for Success TRAIN FOR IT

U.E.I. training in Electric Refrigeration provides just the knowledge you need. It is interesting, thorough, practical, authentic. You study at your convenience in the privacy

of your home.

Place yourself head and shoulders above rule of thumb mechanics. Be a technically trained Refrigeration Technician.

Interesting and valuable facts FREE for the asking. Write today,

UTILITIES ENGINEERING INSTITUTE

17 W. 60th St. New York, N. Y. 404 N. Wells St. Chicago, III.



# DEPEND ON CHANNON

SHI

BABBI BRONZ BRONZ BRONZ BRUSI BRUSI

CARBO CARBO

and c desire

> A Set at a

> ship

TH

ENC Chic St Pub sona swoi edit and beli

(an

SE

Another swell R.S.E.S. Convention has passed. Congratulations to the committee and all others who helped make the convention such a wonderful Success.

# H. CHANNON CO.

133 N. Wacker Drive, CHICAGO, ILL.

Phone or write for new catalog-Franklin 0380

# **COLD CONTROLS &** EXPANSION VALVES

repaired or exchanged at the following prices, F.O.B. Chicago

Automatic Expansion Valves (All Makes). \$1.25
Thermostatic Expansion Valves. 3.00
Automatic Expansion Valves. 2.50
Domestic Cold Controls (Modern Type). 2.00
Commercial Controls (Temp. or Pressure). 2.50
Commercial Dual Controls. 3.00

ALL WORK GUARANTEED FOR 90 DAYS Write for quantity prices

NEW DUTY 2424 Irving Park Blvd., CHICAGO



The Only Original, Genuine Direct Factory MAJESTIC Refrigerator and Radio Parts and Serv-ice for Every Model and Style Prior to 1936

Majestic, G. E., West-inghouse, Grunow inghouse, Grun and all others Rebuilding Service

All Models from \$30.00 Up GENUINE MAJESTIC REFRIGERATOR AND RADIO PARTS SERVICE
5801 West Dickens Avenue, Chicago, Ill.

that does a doubly efficient air filtration job. Cartridges are easily removable and quickly replaced by new ones whenever desired. Air filter apertures have been placed back at cheek location for perfect distribution of its exceptionally light weight. Exhalation valve has been located close to mouth for positive elimination of breathed air.

Face piece is of soft rubber that makes an air-tight fit. A face cloth is provided both for comfort and as a safeguard against dermatitis. Cartridges containing charcoal are also available for use in paint spray or organic vapors and soda lime cartridges for



A NEW RESPIRATOR

chemical and acid gases. The trade name is DUPOR No. 10, made by H. S. Cover, South Bend, Indiana. x x x

# HOLO-KROME SALES MERCHANDISER ASSORTMENT NO. 497

THE Holo-Krome Screw Corporation of Hartford, Conn., skillfully meets the dealer and customer requirements for a compact Safety Set Screw and Wrench Display Carton. This sturdily constructed, illustrated, brilliantly colored, cut-out counter display contains popular sizes of Safety Set Screws that fit household articles such as: oil burners, sewing machines, bicycles, lawn mowers; farm machinery, dairy products and equipment and countless other uses in machinery repair shops, garages, tool rooms, "fix it shops," refrigeration service shops and maintenance work in industrial plants.

Individual boxes, plainly marked for each screw and wrench invite customer inspection

# SHIPPED THE SAME DAY

BABBITT BRONZE BEARINGS BRONZE BUSHINGS BRONZE HAMMERS BRUSH HOLDERS BRUSH SEATING STONES CARBON BRUSHES
CARBON CONTACTS
CARBON PLATES
COMMUTATOR FILES
COMMUTATOR STONES

ON

ON

S.E.S.

assed

the

others ne con-

nderful

CO.

rive,

0380

e is

outh

of

the

mav

ed, ay ws nrs; p. it n-

n

N

COPPER CONTACTS
ELECTRIC PORTABLE
BLOWERS
ELECTRIC SOLDERING
POTS FELT WICKING FIBRE WASHERS INDUSTRIAL VACUUM CLEANERS SHUNT TERMINALS SHUNT WIRE

ELECTRICAL SPECIALTIES 128 No. Clinton St. Tel. Randolph 9117

CHICAGO and quick selection by the merchant of sizes desired by the customer.



Assortment No. 497 contains 144 Safety Set Screws, 48 Safety Set Screw Wrenches at a list price of \$9.05. Size of carton, 91/4 in. x 8 in. x 13/4 in. Weight in protective shipping container, 3 lbs.

# THE REFRIGERATION SERVICE ENGINEER November, 1938

November, 1938

Statemal of the ownership, management, circulation, etc., required by the Art of Congress of August 24, 1912, and March 3, 1983, of THE REFRIGERATION SERVICE ENGINEER, published monthly at 435 North Waller Are, Chicago, Ill., for October, 1938.

State of Illinois, Cook County, as:—Before me a Notary Public in and for the State and county aforesaid, personally appeared J. F. Nickerson, who, having been duly sworn according to law, deposes and says that he is the editor of THE REFRIGERATION SERVICE ENGINEER, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, and publication professional statement of the ownership of the control of

# Refrigerating Engineers Appreciate the Accuracy of ALCO "TK" Thermo Valves



THE success and acceptance of the new Alco low cost, small capacity "TK" Thermo Valve is due to the famous Alco record of accurate control. The "TK," like other Alco Thermo Valves, restricts the line of complete evaporationists, assuring high-assuring the second of th

tion to the narrowest limits—assuring highest evaporator efficiency at all times.

est evaporator efficiency at all times. Since their inception, no "TK" valve has ever lost its charge — additional proof of the dependable, trouble-free service characteristic of every Alec refrigerant control. Yet the "TK" is offered at a saving of 20 to 40% in cost over previous Aloo small capacity valves. It will pay you ta get full details and specifications of Alco's line of "TK". Thermo Valves. See your jobber today.

# ALCO VALVE COMPANY, INC.

2630 Big Bend Blvd. St. Louis, Mo.



**Engineered Refrigerant** Controls for Highest Evaporator Efficiency

# DOMESTIC CONTROLS REPAIRED

Ranco Pencil....\$1.75 Cutler-Hammer ..\$2.00 Ranco Box..... 2.00 Bishop Babcock., 2.50 Gen'l Electric.... 2.00 Majestic ...... 2.50 Tag ..... 2.00 Penn Magnetic... 2.50

> In business over 20 years. Our name is our guarantee.

# UNITED SPEEDOMETER REPAIR CO., Inc.

438 West 57th Street

New York City

There are no bondholders, mortgagees, or other security

There are no bondholders, mortgagees, or other security holders.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, and they appear upon the books of the company but also in cases the books of the company but also in cases the books of the company parameters have been contained to the company and the books of the company also that the said two paragraphs contain statements embracing affilm's full knowledge and belief as to the circumstances and conditions under which the stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affant has no reason to believe interest direct or indirect in the said stock, bonds, or other securities than as so stated by him.

Sworn to and subscribed before me this 20th day of September, 1938. L. R. Townsley, notary public. [Seal.] (My commission expires July 8, 1940.)

# Index to advertisements

Airo Supply Co.         59           Alco Valve Co.         61           Alter Co., The Harry         00           American Radiator Co.         00           Ansul Chemical Co.         63           Automatic Heating & Cooling Supply Co.         52           Automatic Products Co.         3	Maguire Co., Wm. F.       6         Marlo Coil Co.       6         Marsh Corp., James P.       4         Merchant & Evans Co.       0         Miller Rubber Co.       6         Mills Novelty Co.       4         Minneapolis-Honeywell Regulator Co.       4
Blythe Co., H. W	New Duty 6
Bonney Forge & Tool Wks.         Back Cover           Channon Co., H.         60           Chicago Eye Shield Co.         55           Chicago-Wilcox Mfg. Co         54	Peerless of America, Inc. 4 Penn Electric Switch Co. 9 Practical Instrument Co. 0
Commercial Coil & Refrigeration Co	Ranco, Inc
Dennis & Co., W. J	Refrigeration Supplies Co., Ltd. 55 Rempe Co. 55 Rex Refrigeration Service, Inc. 55
Fedders Manufacturing Co	Rotary Seal CoInside Front Cover
Parts Service	Shank Co., Cyrus         0           Snap-On Tools Corp.         4           Syntron Co.         4
Gilmer Co., L. H 50	Tecumseh Products Co
Hammond Drierite Co., W. A	United Speedometer Repair Co., Inc 61
Imperial Brass Manufacturing Co 64	Utilities Engineering Institute 60
Jarrow Products Corp 59	Virginia Smelting Co
Kerotest Manufacturing Co 42 and 43	Zenith Carburetor Co 00



# MARLO

Low Temperature Unit Coolers
For Sub-Zero Rooms

The Marlo Coil Company originated the use of Electrical Heaters for quick defrosting of refrigeration coils. This exclusive Marlo development has been in use several years.

Perfect defrosting of coils is completed in 15 to 20 minutes by the simple closing of a switch. Units with automatic defrosting available if desired. Not necessary to remove contents of room when defrosting, and room temperature will rise only 5 to 10 degrees. No engineer is required.

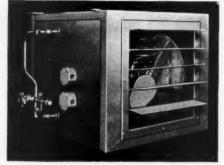
.. 47

.. 61

. . 51

There's no heavy accumulation of frost as in other types of coil installations. When Marlo Low Temperature Coils

SERVICE ENGINEER



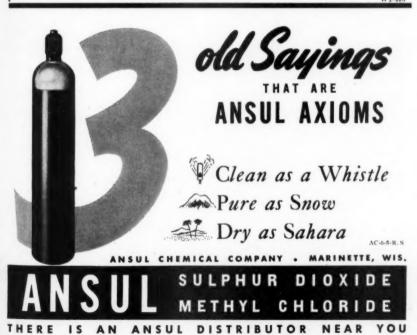
frost, defrosting is accomplished quickly and effectively.

Marlo Low Temperature units harden ice cream in ½ the time required by other coil installations. Temperatures as low as 20 degrees below zero may be had if desired.

Send for complete information and literature.

November, 1938

Marlo Coil Co., 6135 Manchester Ave., St. Louis, Mo.



63



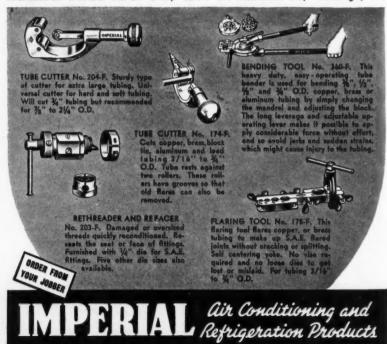
# -- and Imperial tools for refrigeration work would quickly correct it

AYBE this picture is just a trifle exaggerated but there is no doubt about the fact that tubing work can be mighty exasperating.

Installation and service men are taking a three way crack at the tubing problem. First they are using Imperial copper tubing. Then they are using the various Imperial connecting fittings and, third, they are using Imperial tools.

Write for detailed information or ask your jobber about Imperial's complete line of inexpensive service tools that take all the grief out of tubing work.

IMPERIAL BRASS MFG. CO., 1204 W. Harrison St., Chicago, Ill.



# Dependable HENR

# DRYERS, STRAINERS AND LARGE LINE VALVES

The advanced engineering design and exclusive features of construction of Henry products have made the Henry name a by-word for reliability and honest value throughout the industry.



Most Complete Line of Dryers, Strainers and Large Line Valves for Refrigeration and Air Conditioning—Also Ammonia Valves and Forged Steel Fittings.

# HENRY



VALVE CO. 1001-19 N. SPAULDING AVE. CHICAGO, ILL.

SEE YOUR

WRITE FOR CATALOGS



# **Bonney Specialized Refrigeration Too**

No matter what your tool requirements may be for refrigeration service work—Bonney has the right tool for every job.

Complete lines of sockets with detachable handles and attachments, box wrenches, open-end wrenches, flare nut wrenches, special refrigeration ratchets, valve stem sockets, packing gland nut sockets, flaring and pinch-off tools, tube benders and cutters, punches, chisels, hammers, pliers,—all are included—and each has gained a world-wide repretation among mechanics and service engineers as "The Finest That Money Can Buy."

Made of selected steels, carefull heat-treated, they will withstand years of constant use. Each is designed specially for its particular job

Catalog No. 38R shows the fulline of Bonney Specialized Refrigeration Tools. Write for your copy today.

# BONNEY FORGE & TOOL WORKS, Allentown, Pa

In Canada—Gray-Bonney Tool Co. Ltd., St. Clarens & Royce Ave., Toronto
Export Office—38 Pearl Street, New York, N.Y.
Stocked by Leading Jobbers Everywhere

**BONNEY Tools for Refrigeration Service**